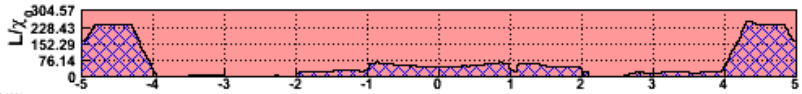
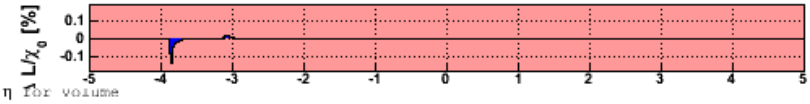
# 1 Validation Summary: Detector CAVE in Geometry y2011

CAVE

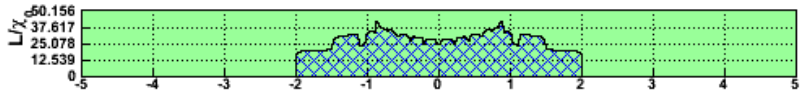



Material budget vs η for volume CAVE

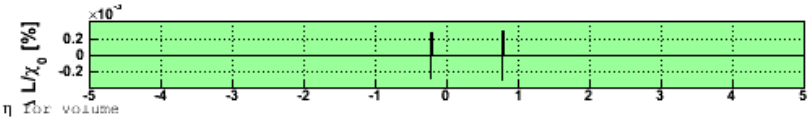



Radiation length differential vs η for volume

MAGP

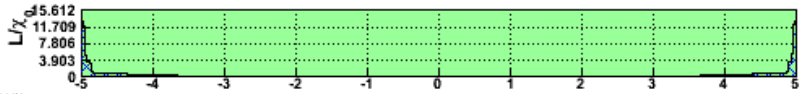



Material budget vs η for volume MAGP

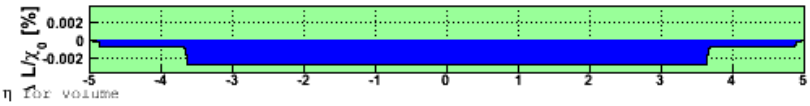



Radiation length differential vs η for volume

PIPE

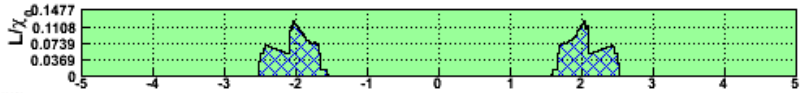



Material budget vs η for volume PIPE

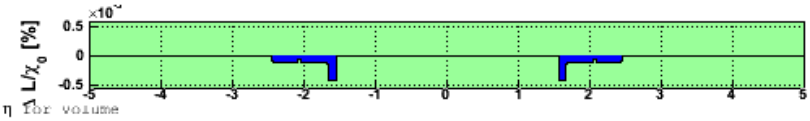



Radiation length differential vs η for volume

SCON

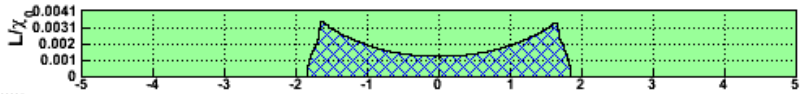



Material budget vs η for volume SCON

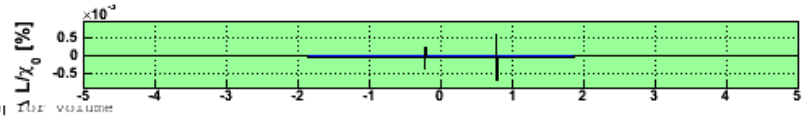



Radiation length differential vs η for volume

SROD

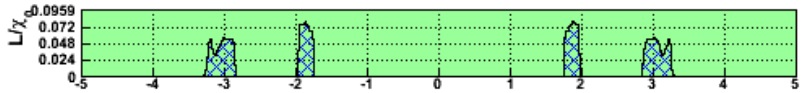



Material budget vs η for volume SROD

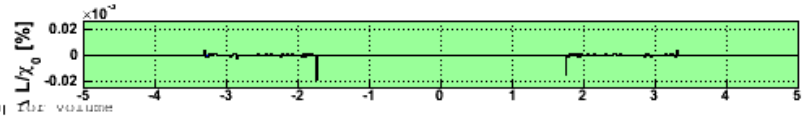



Radiation length differential vs η for volume

SBSP



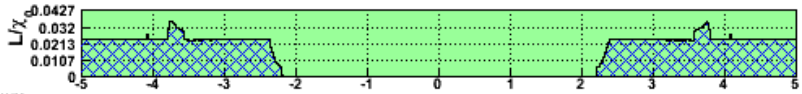

Material budget vs η for volume SBSP



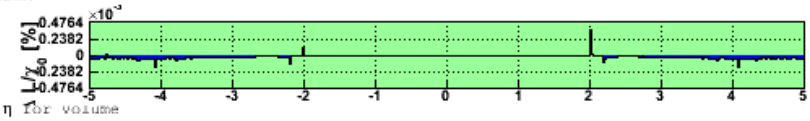

Radiation length differential vs η for volume

## 2 Validation Summary: Detector CAVE in Geometry y2011

BBCM

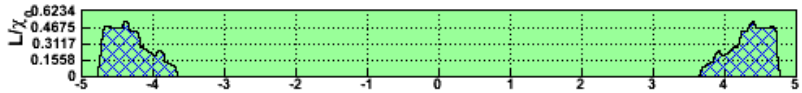



Material budget vs η for volume BBCM

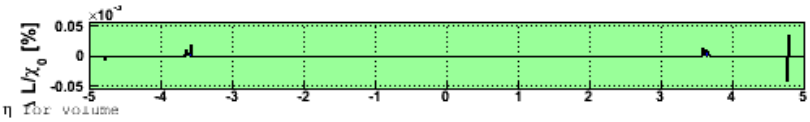



Radiation length differential vs η for volume

IBEM

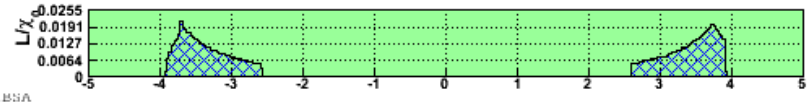



Material budget vs η for volume IBEM

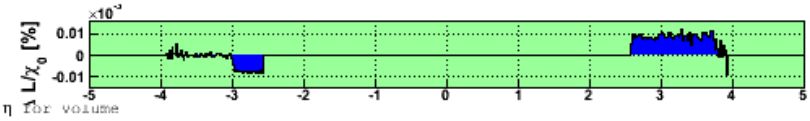



Radiation length differential vs η for volume

IBSA

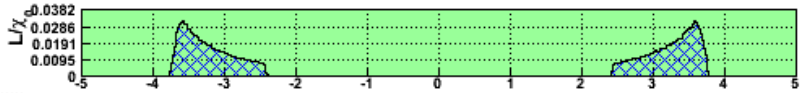



Material budget vs η for volume IBSA

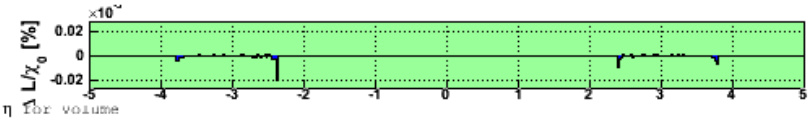



Radiation length differential vs η for volume

IBSB

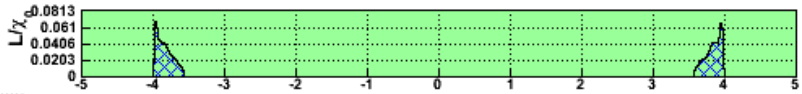



Material budget vs η for volume IBSB

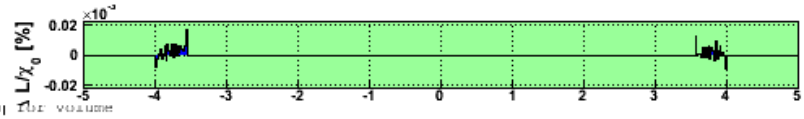



Radiation length differential vs η for volume

IBSC

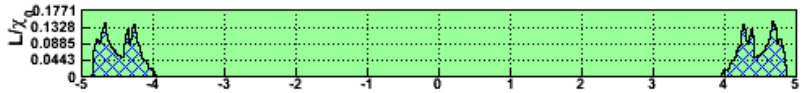



Material budget vs η for volume IBSC

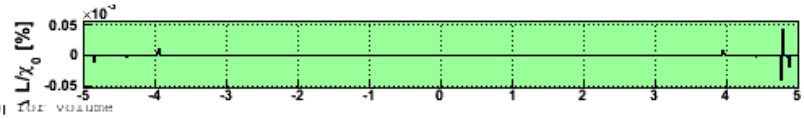



Radiation length differential vs η for volume

IBSD



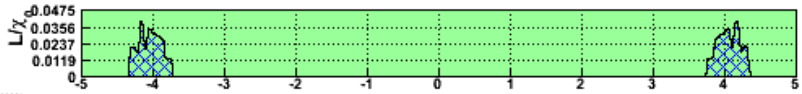

Material budget vs η for volume IBSD



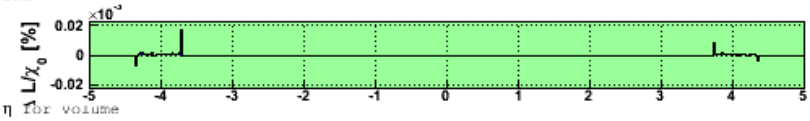

Radiation length differential vs η for volume

# 3 Validation Summary: Detector CAVE in Geometry y2011

IBSE

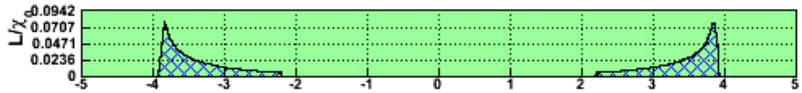



Material budget vs η for volume IBSE

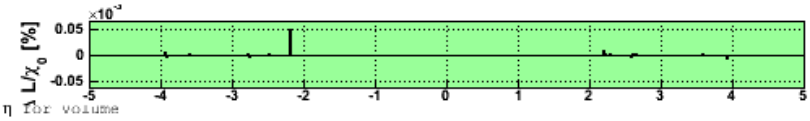



Radiation length differential vs η for volume

IBSF

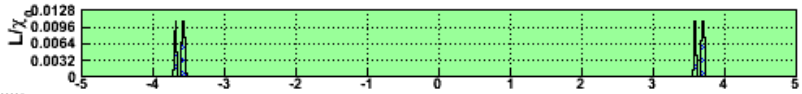



Material budget vs η for volume IBSF

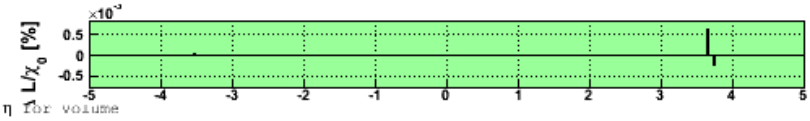



Radiation length differential vs η for volume

IBSG

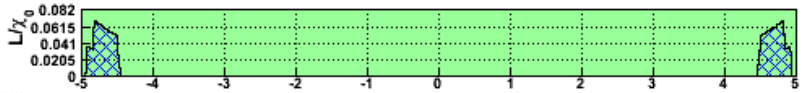



Material budget vs η for volume IBSG

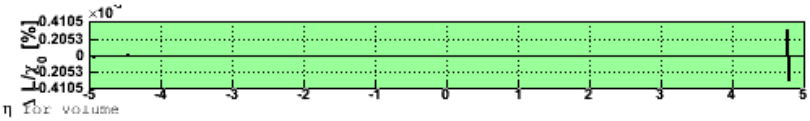



Radiation length differential vs η for volume

IBSH

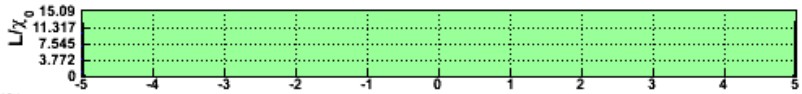



Material budget vs η for volume IBSH

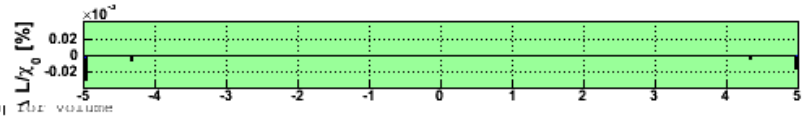



Radiation length differential vs η for volume

ZCAL

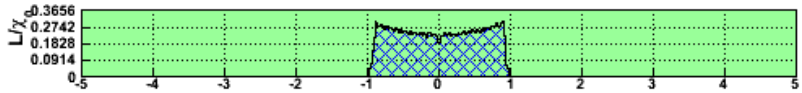



Material budget vs η for volume ZCAL

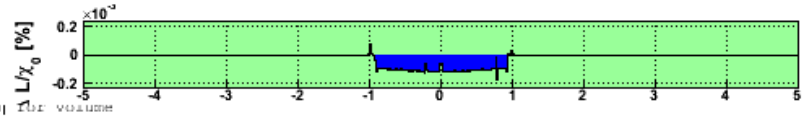



Radiation length differential vs η for volume

BTOF



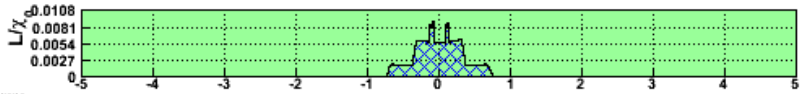

Material budget vs η for volume BTOF



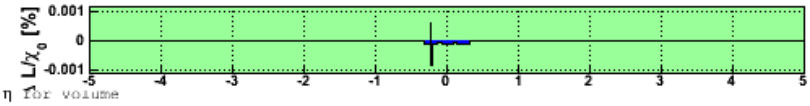

Radiation length differential vs η for volume

# 4 Validation Summary: Detector CAVE in Geometry y2011

MUTD

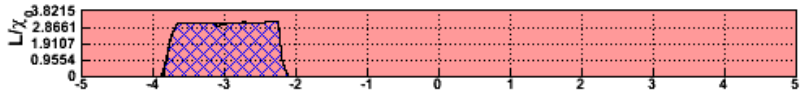



Material budget vs η for volume MUTD

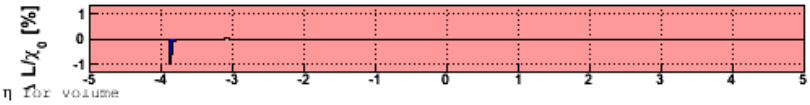



Radiation length differential vs η for volume

PHMD

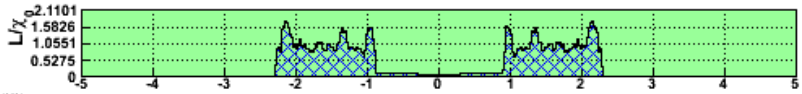



Material budget vs η for volume PHMD

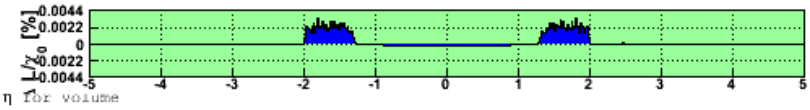



Radiation length differential vs η for volume

TPCE

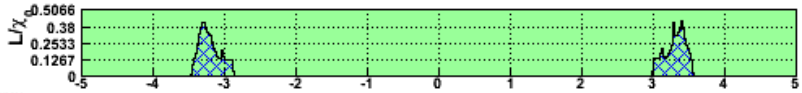



Material budget vs η for volume TPCE

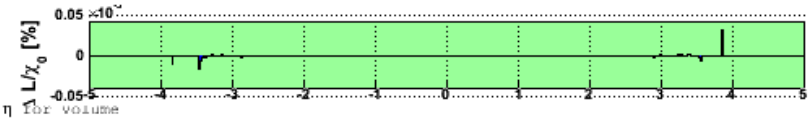



Radiation length differential vs η for volume

FTMO

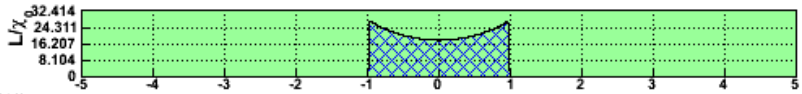



Material budget vs η for volume FTMO

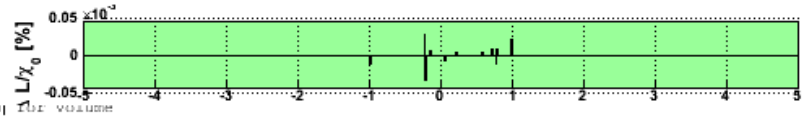



Radiation length differential vs η for volume

CALB

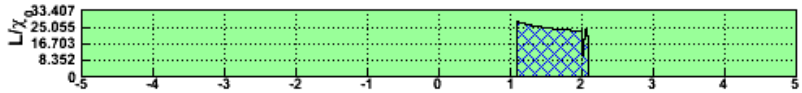



Material budget vs η for volume CALB

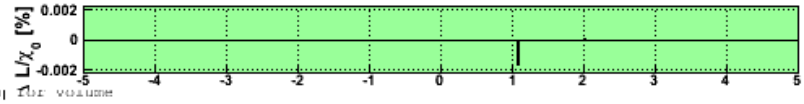



Radiation length differential vs η for volume

ECAL



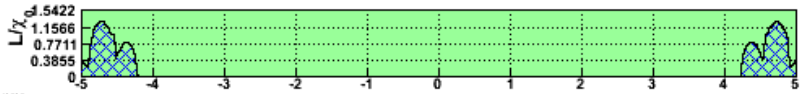

Material budget vs η for volume ECAL



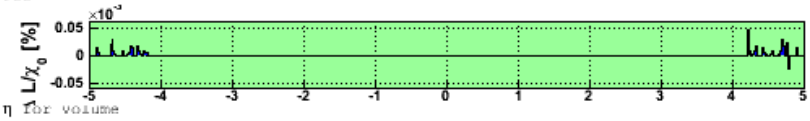

Radiation length differential vs η for volume

# 5 Validation Summary: Detector CAVE in Geometry y2011

VPDD

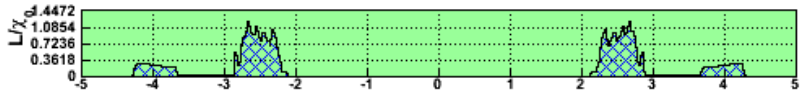



Material budget vs η for volume VPDD

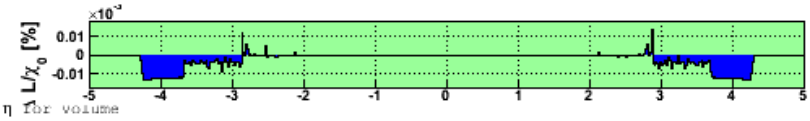



Radiation length differential vs η for volume

FTPC

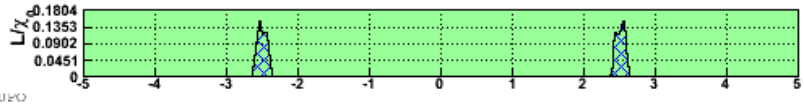



Material budget vs η for volume FTPC

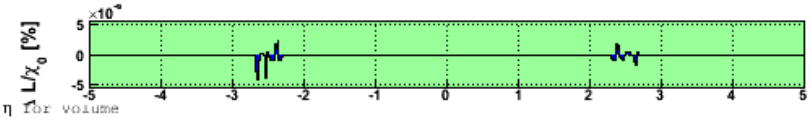



Radiation length differential vs η for volume

SUPO

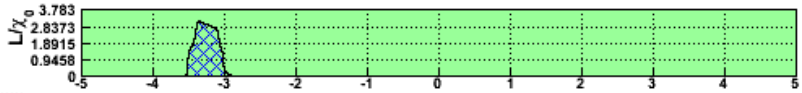



Material budget vs η for volume SUPO

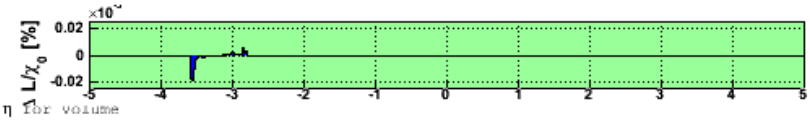



Radiation length differential vs η for volume

FBOX

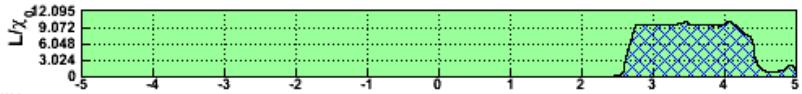



Material budget vs η for volume FBOX

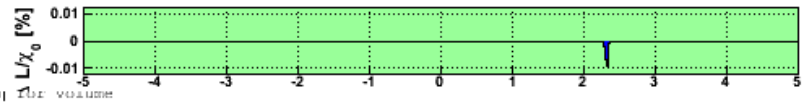



Radiation length differential vs η for volume

FBO1

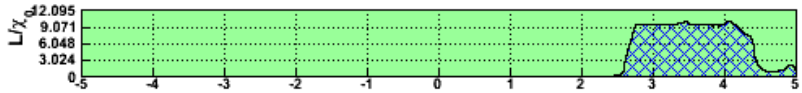



Material budget vs η for volume FBO1

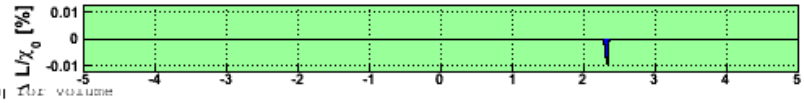



Radiation length differential vs η for volume

FBO2

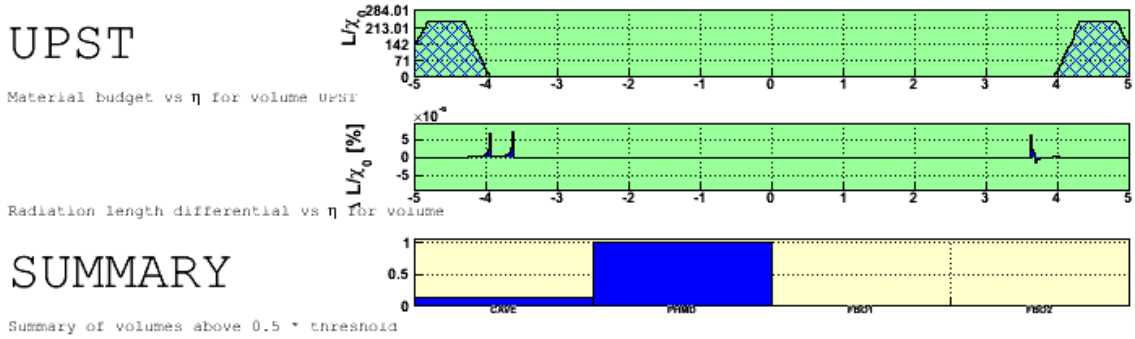



Material budget vs η for volume FBO2



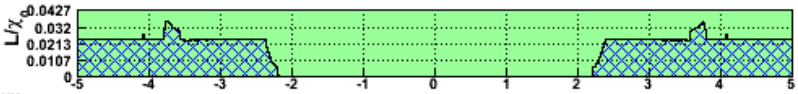

Radiation length differential vs η for volume

# 6 Validation Summary: Detector CAVE in Geometry y2011

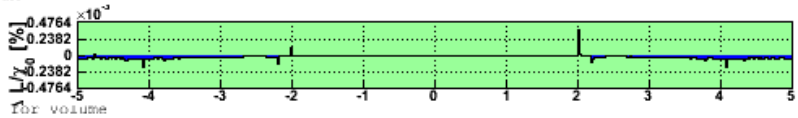


# 7 Validation Summary: Detector BBCM in Geometry y2011

BBCM

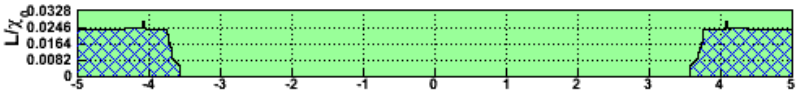



Material budget vs η for volume BBCM

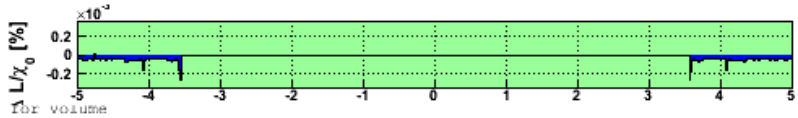



Radiation length differential vs η for volume

BBCA

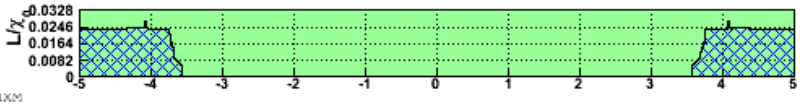



Material budget vs η for volume BBCA

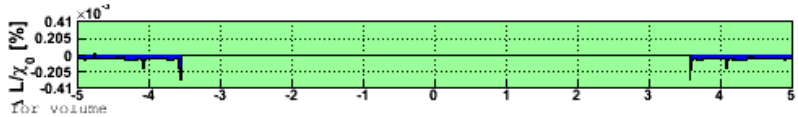



Radiation length differential vs η for volume

THXM

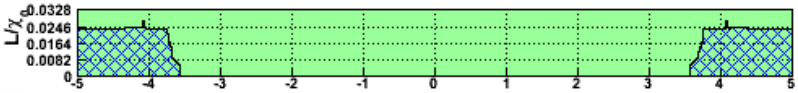



Material budget vs η for volume THXM

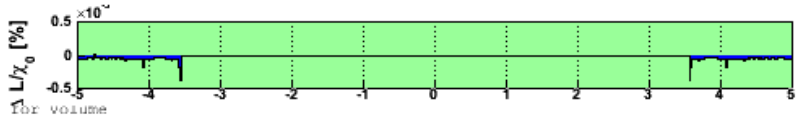



Radiation length differential vs η for volume

SHXT

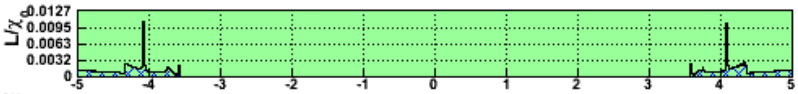



Material budget vs η for volume SHXT

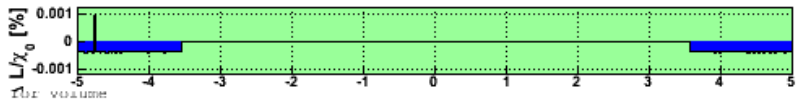



Radiation length differential vs η for volume

CLAD

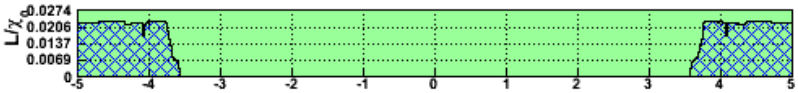



Material budget vs η for volume CLAD

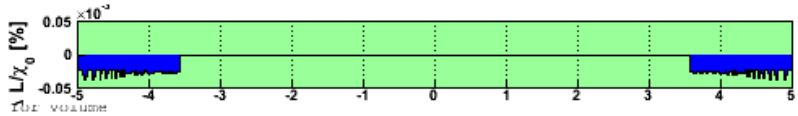



Radiation length differential vs η for volume

BPOL

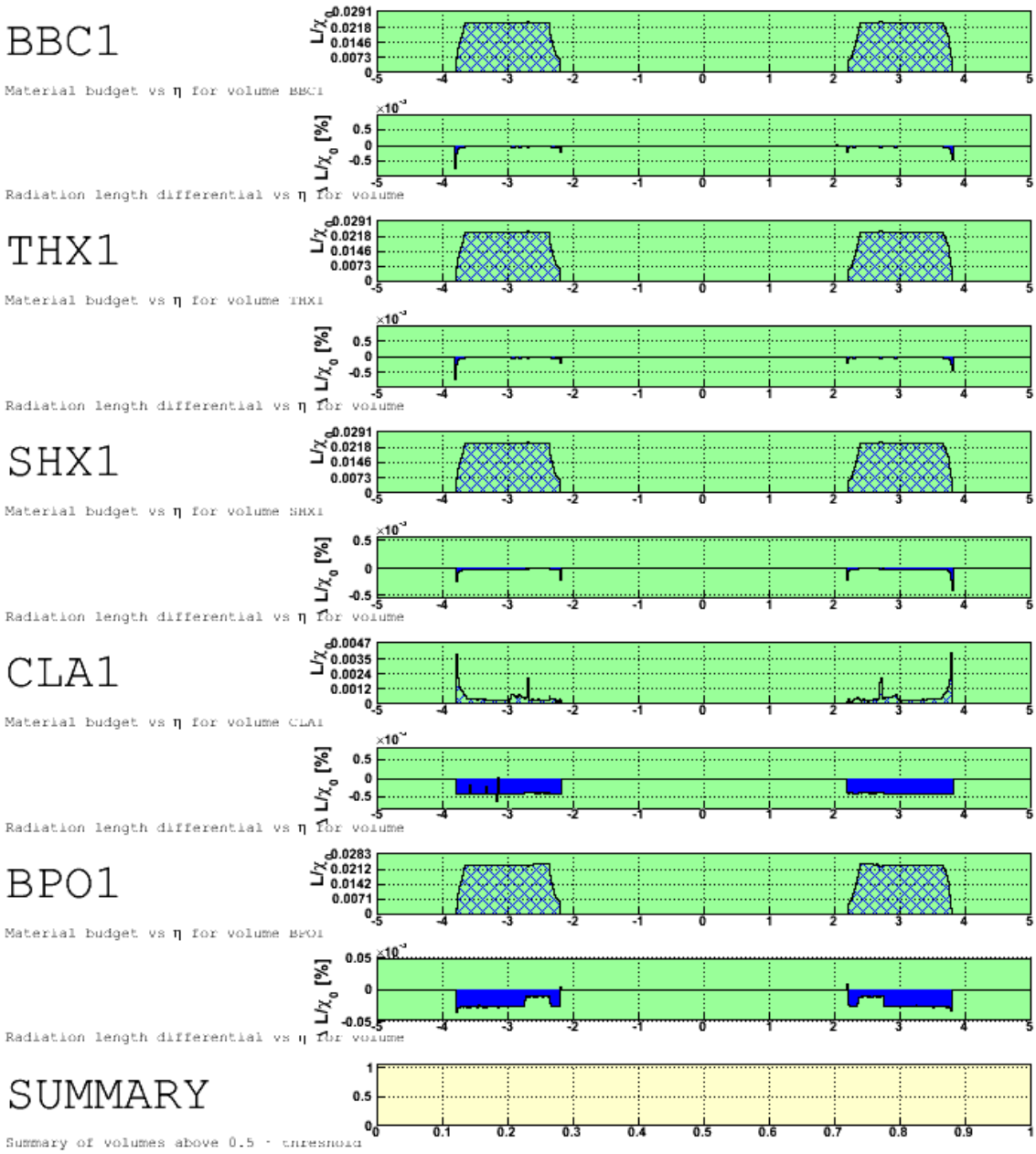



Material budget vs η for volume BPOL



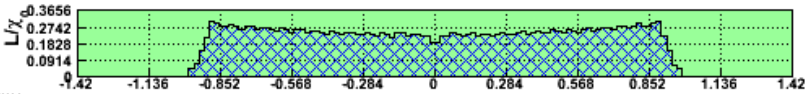

Radiation length differential vs η for volume

# 8 Validation Summary: Detector BBCM in Geometry y2011

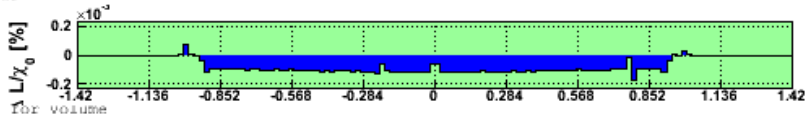


# 9 Validation Summary: Detector BTOF in Geometry y2011

BTOF

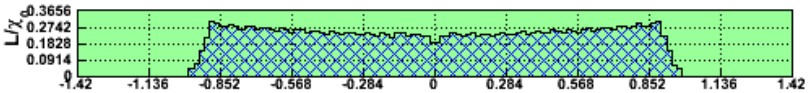



Material budget vs η for volume BTOF

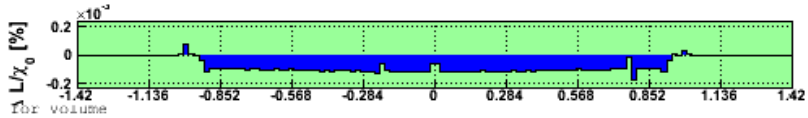



Radiation length differential vs η for volume

BTOH

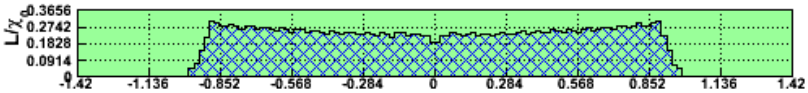



Material budget vs η for volume BTOH

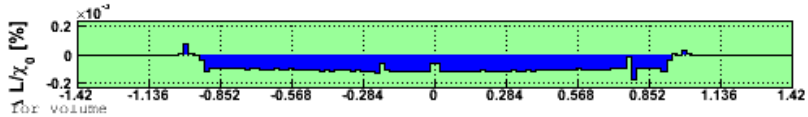



Radiation length differential vs η for volume

BSEC

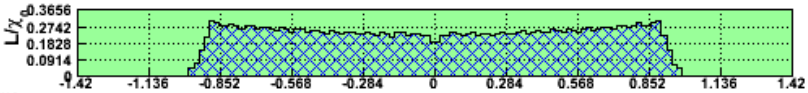



Material budget vs η for volume BSEC

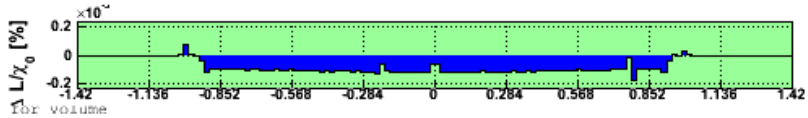



Radiation length differential vs η for volume

BTRA

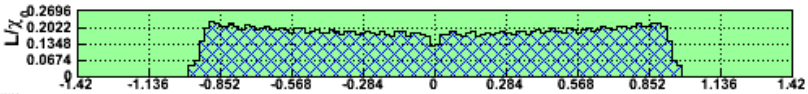



Material budget vs η for volume BTRA

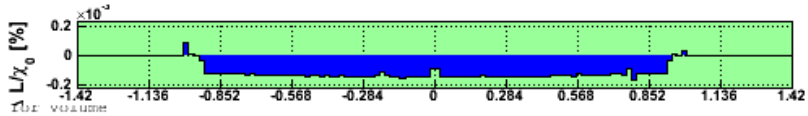



Radiation length differential vs η for volume

BXTR

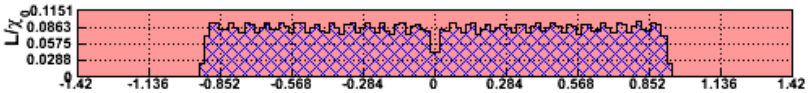



Material budget vs η for volume BXTR

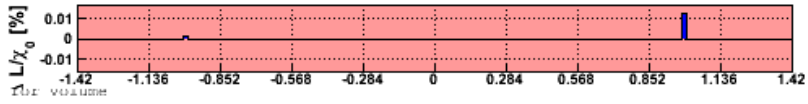



Radiation length differential vs η for volume

BRTC



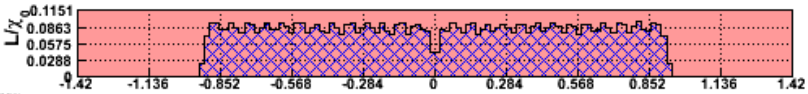

Material budget vs η for volume BRTC



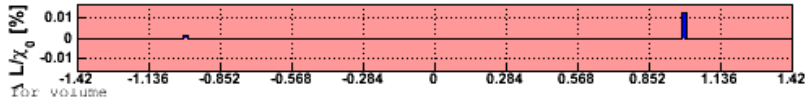

Radiation length differential vs η for volume

# 10 Validation Summary: Detector BTOF in Geometry y2011

BGMT

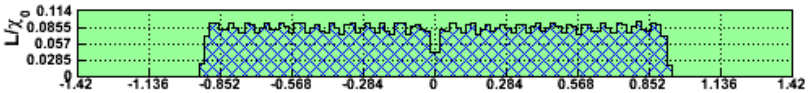



Material budget vs η for volume BGMT

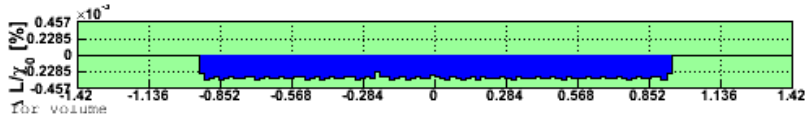



Radiation length differential vs η for volume

BRMD

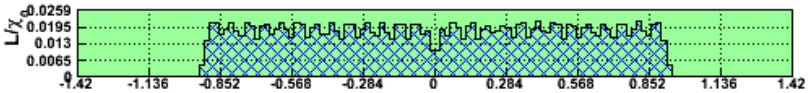



Material budget vs η for volume BRMD

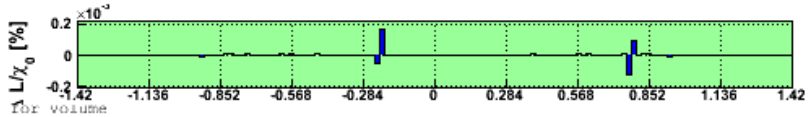



Radiation length differential vs η for volume

BRHC

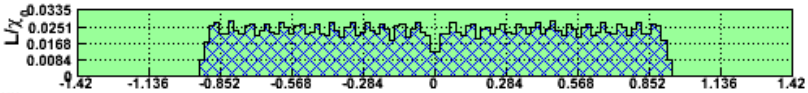



Material budget vs η for volume BRHC

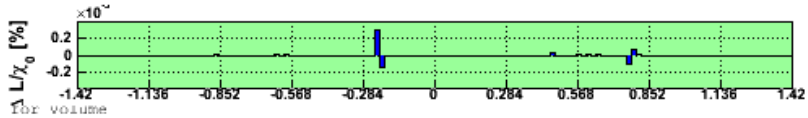



Radiation length differential vs η for volume

BRCB

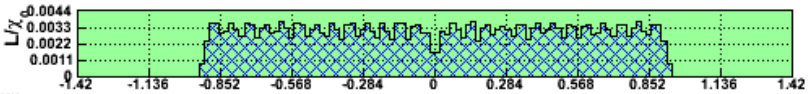



Material budget vs η for volume BRCB

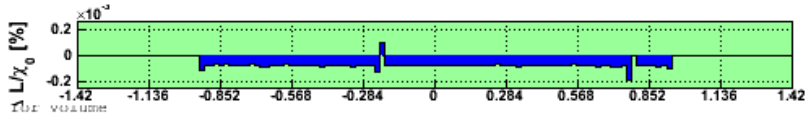



Radiation length differential vs η for volume

BRMY

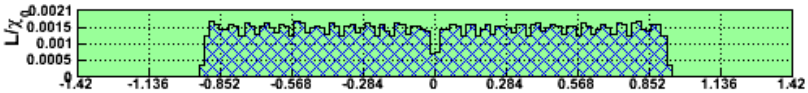



Material budget vs η for volume BRMY

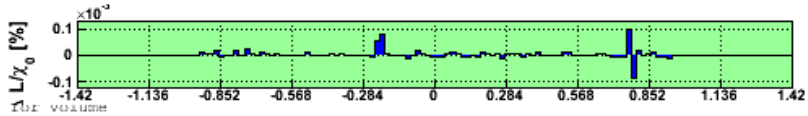



Radiation length differential vs η for volume

BRGR



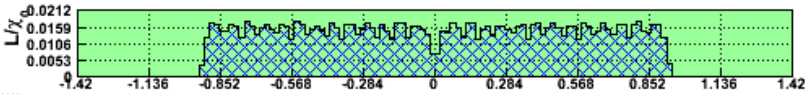

Material budget vs η for volume BRGR



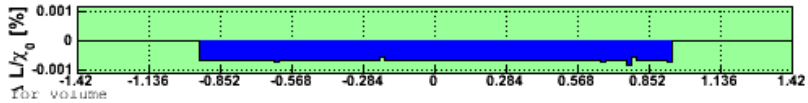

Radiation length differential vs η for volume

# 11 Validation Summary: Detector BTOF in Geometry y2011

BROG

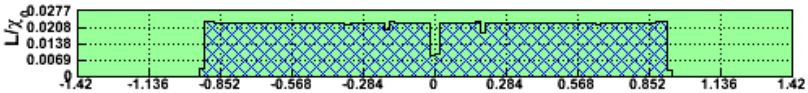



Material budget vs η for volume BROG

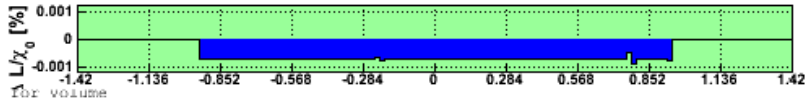



Radiation length differential vs η for volume

BRDT

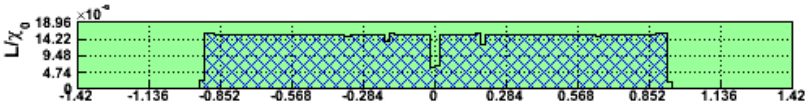



Material budget vs η for volume BRDT

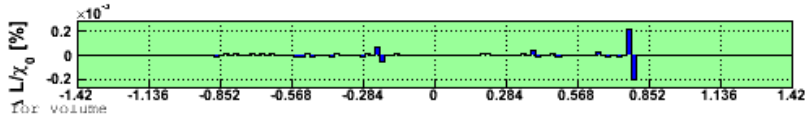



Radiation length differential vs η for volume

BRSG

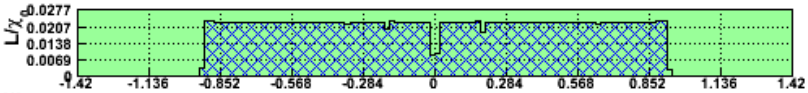



Material budget vs η for volume BRSG

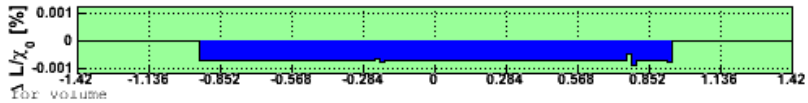



Radiation length differential vs η for volume

BRIG

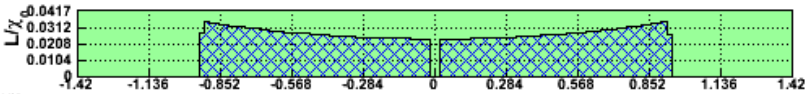



Material budget vs η for volume BRIG

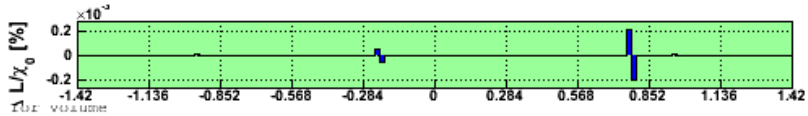



Radiation length differential vs η for volume

BUPC

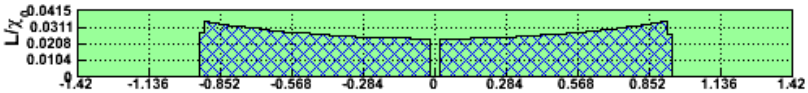



Material budget vs η for volume BUPC

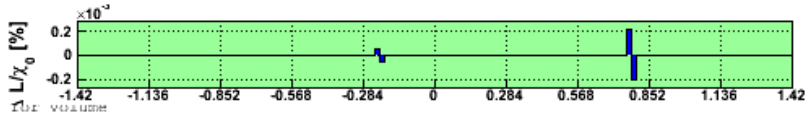



Radiation length differential vs η for volume

BTFE



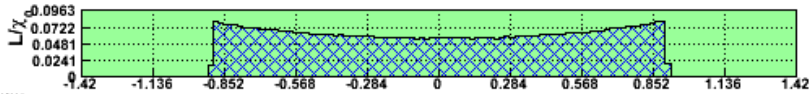

Material budget vs η for volume BTFE



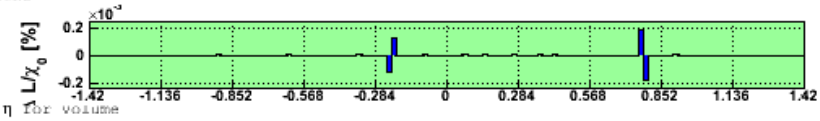

Radiation length differential vs η for volume

## 12 Validation Summary: Detector BTOF in Geometry y2011

BUND

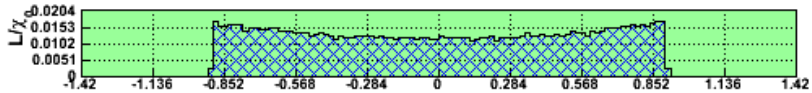



Material budget vs η for volume BUND

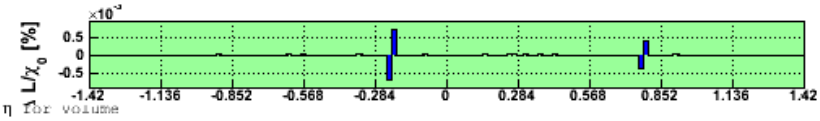



Radiation length differential vs η for volume

BTFT

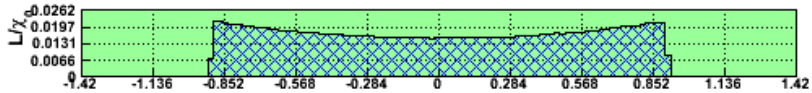



Material budget vs η for volume BTFT

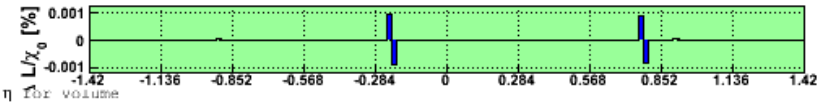



Radiation length differential vs η for volume

BASE

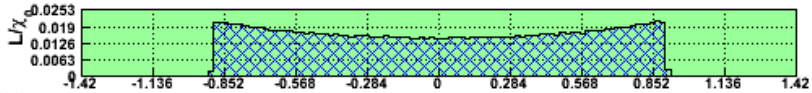



Material budget vs η for volume BASE

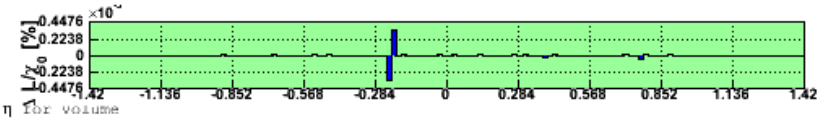



Radiation length differential vs η for volume

BARM

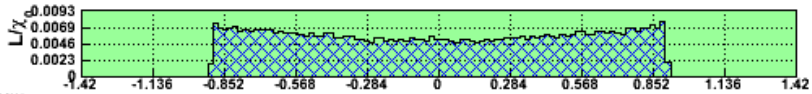



Material budget vs η for volume BARM

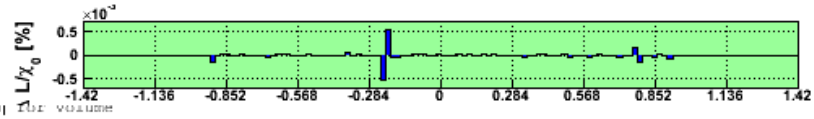



Radiation length differential vs η for volume

BANG

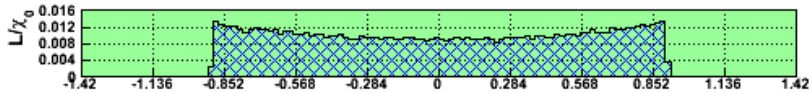



Material budget vs η for volume BANG

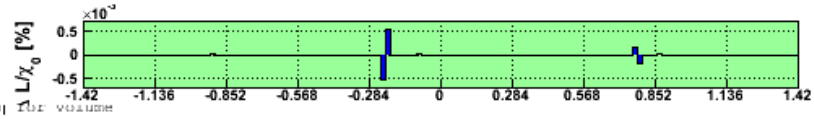



Radiation length differential vs η for volume

BCOV

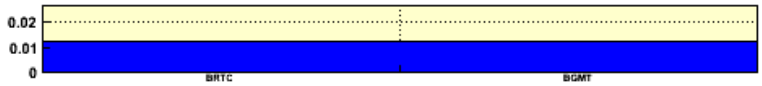



Material budget vs η for volume BCOV




Radiation length differential vs η for volume

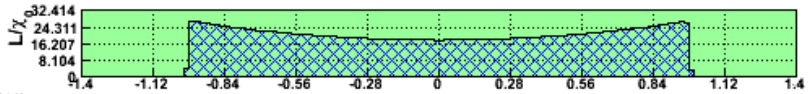
SUMMARY



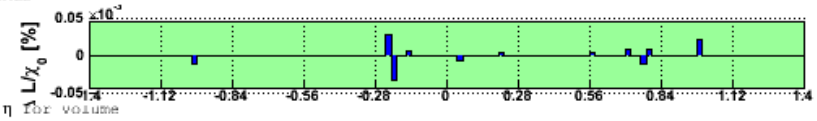

Summary of volumes above 0.5 - threshold

# 13 Validation Summary: Detector CALB in Geometry y2011

CALB

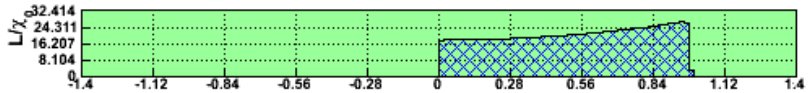



Material budget vs η for volume CALB

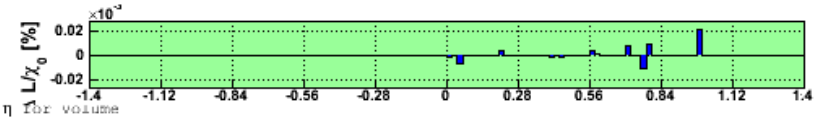



Radiation length differential vs η for volume

CHLV

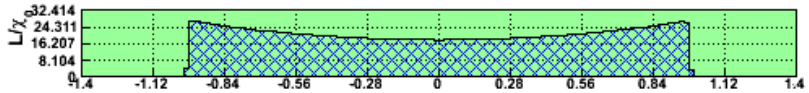



Material budget vs η for volume CHLV

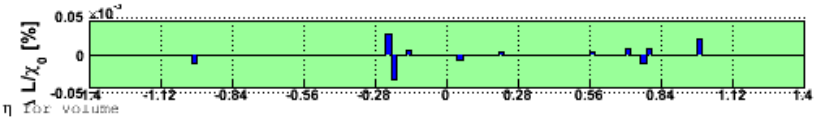



Radiation length differential vs η for volume

CPHI

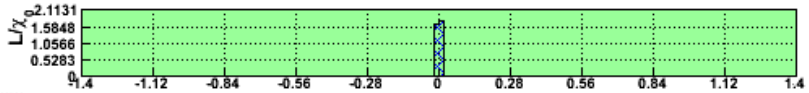



Material budget vs η for volume CPHI

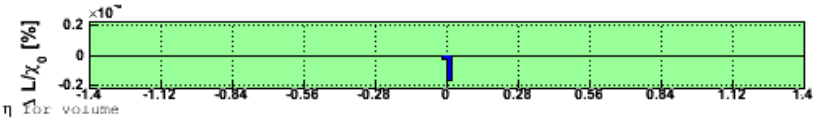



Radiation length differential vs η for volume

CSZO

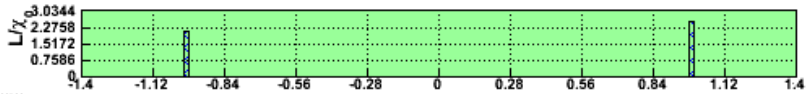



Material budget vs η for volume CSZO

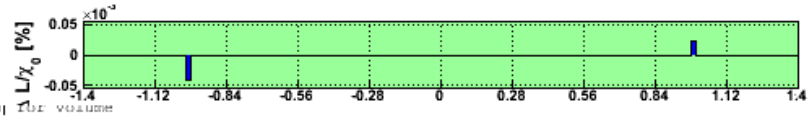



Radiation length differential vs η for volume

CSZU

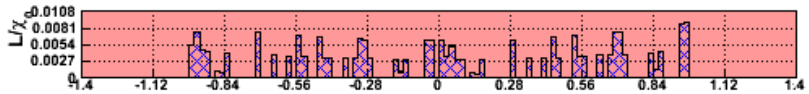



Material budget vs η for volume CSZU

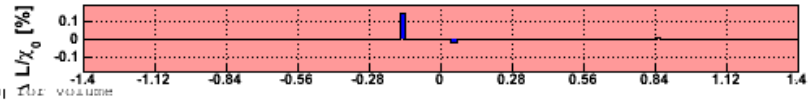



Radiation length differential vs η for volume

CSPT



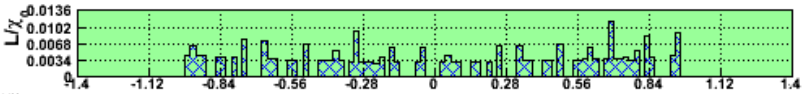

Material budget vs η for volume CSPT



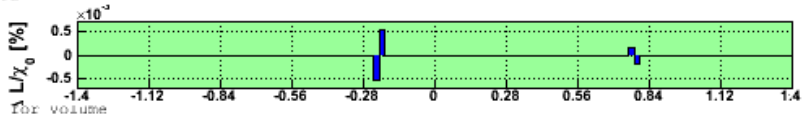

Radiation length differential vs η for volume

# 14 Validation Summary: Detector CALB in Geometry y2011

CSPB

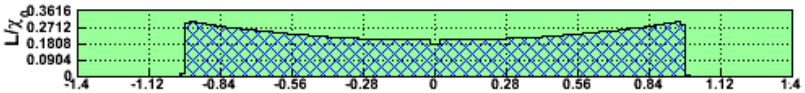



Material budget vs η for volume CSPB

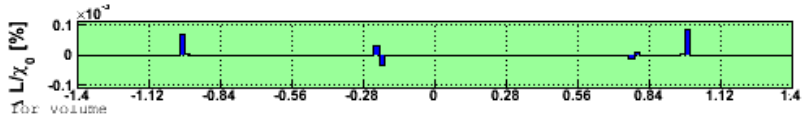



Radiation length differential vs η for volume

CBTW

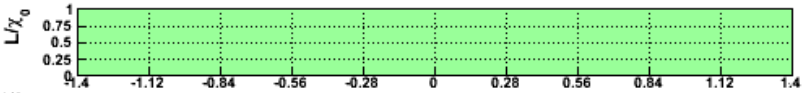



Material budget vs η for volume CBTW

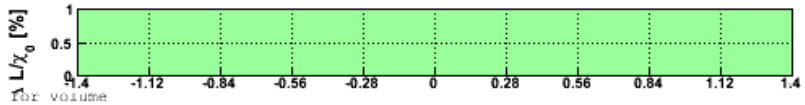



Radiation length differential vs η for volume

CSLG

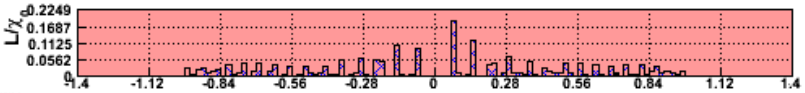



Material budget vs η for volume CSLG

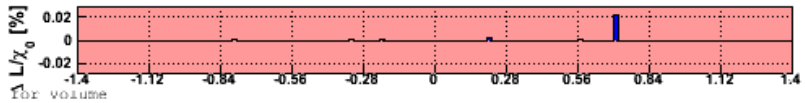



Radiation length differential vs η for volume

CSTP

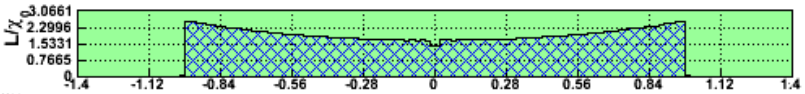



Material budget vs η for volume CSTP

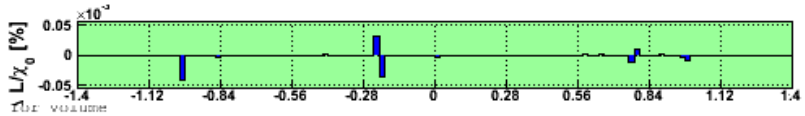



Radiation length differential vs η for volume

CSUP

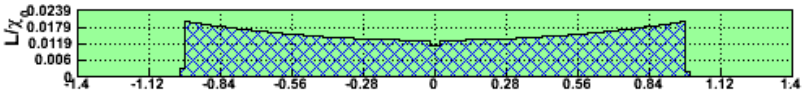



Material budget vs η for volume CSUP

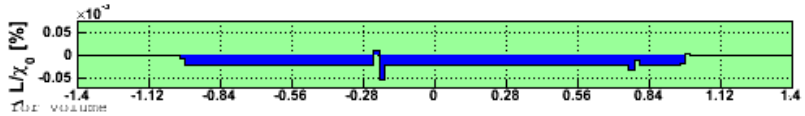



Radiation length differential vs η for volume

CSCI



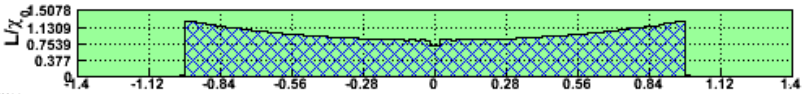

Material budget vs η for volume CSCI



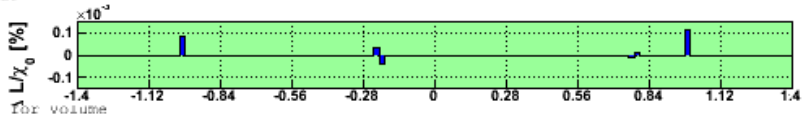

Radiation length differential vs η for volume

# 15 Validation Summary: Detector CALB in Geometry y2011

CPBP

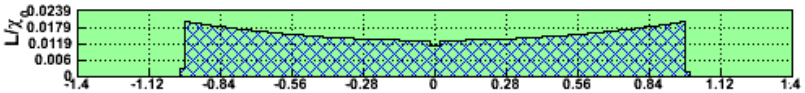



Material budget vs η for volume CPBP

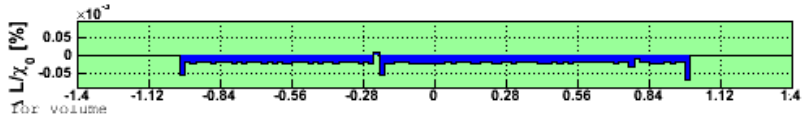



Radiation length differential vs η for volume

CSC1

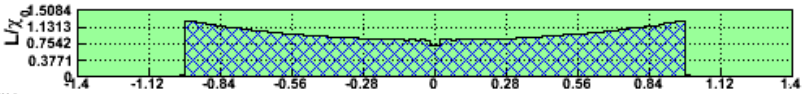



Material budget vs η for volume CSC1

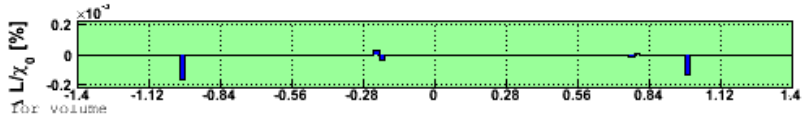



Radiation length differential vs η for volume

CPB1

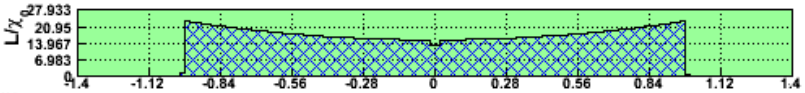



Material budget vs η for volume CPB1

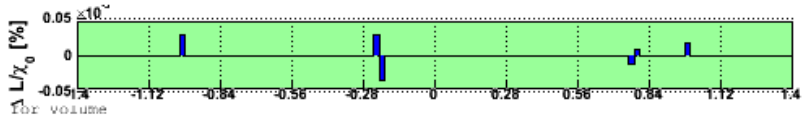



Radiation length differential vs η for volume

CSU1

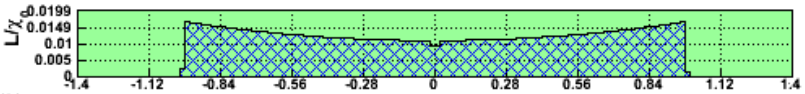



Material budget vs η for volume CSU1

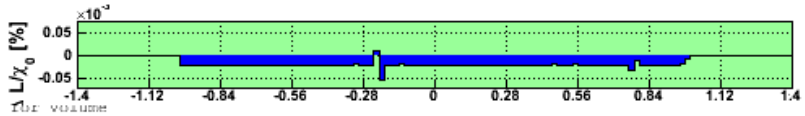



Radiation length differential vs η for volume

CSC2

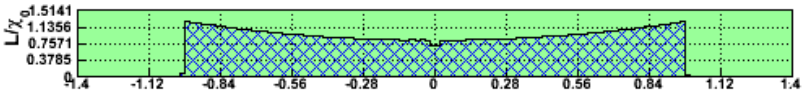



Material budget vs η for volume CSC2

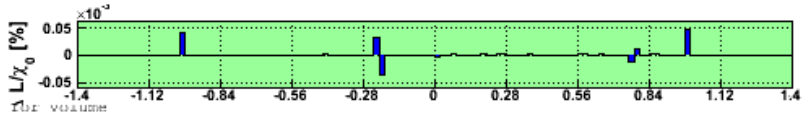



Radiation length differential vs η for volume

CPB2

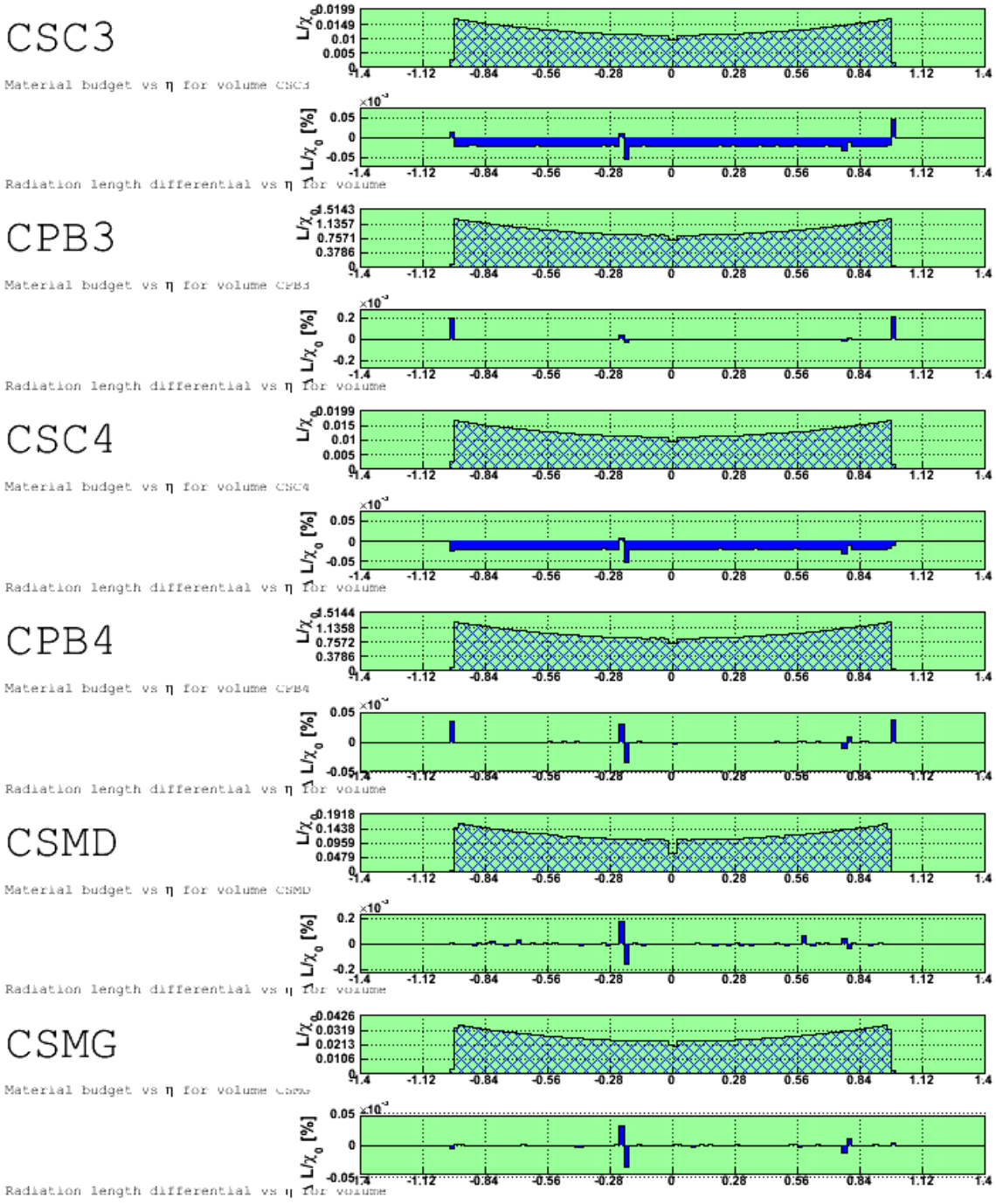



Material budget vs η for volume CPB2



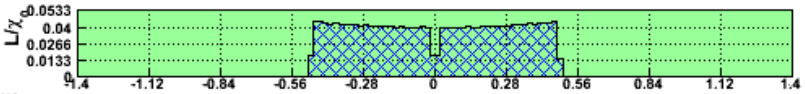

Radiation length differential vs η for volume

# 16 Validation Summary: Detector CALB in Geometry y2011

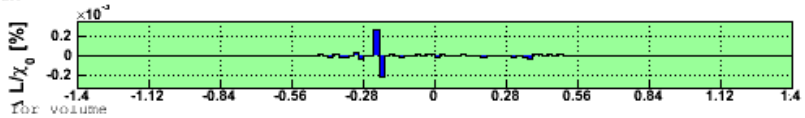


# 17 Validation Summary: Detector CALB in Geometry y2011

CSDA

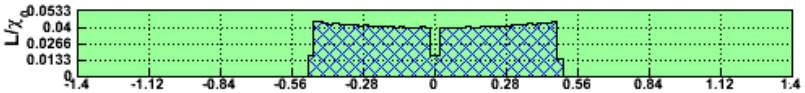



Material budget vs η for volume CSDA

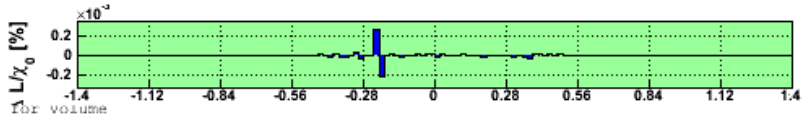



Radiation length differential vs η for volume

CSME

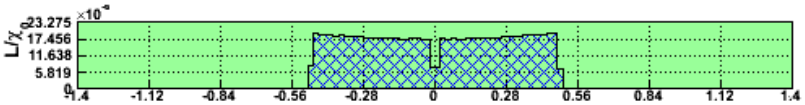



Material budget vs η for volume CSME

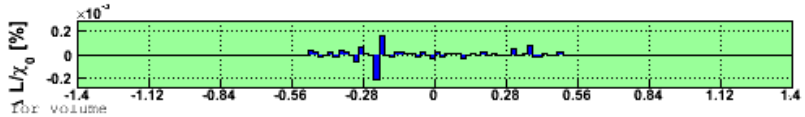



Radiation length differential vs η for volume

CSHI

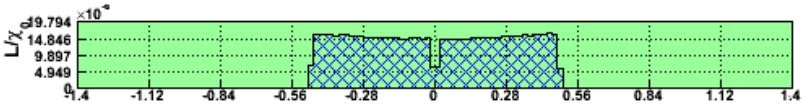



Material budget vs η for volume CSHI

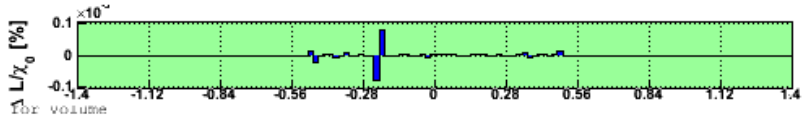



Radiation length differential vs η for volume

CSH1

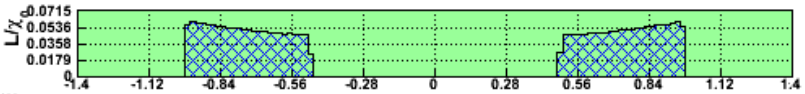



Material budget vs η for volume CSH1

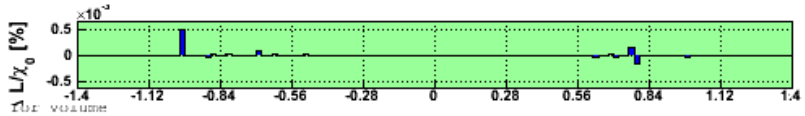



Radiation length differential vs η for volume

CSD1

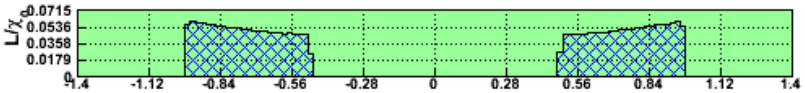



Material budget vs η for volume CSD1

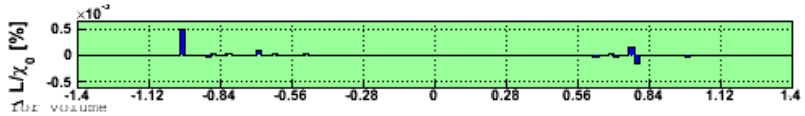



Radiation length differential vs η for volume

CSM1



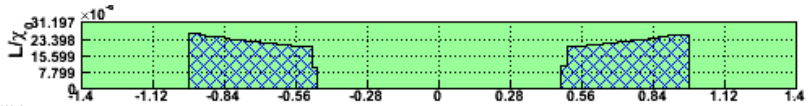

Material budget vs η for volume CSM1



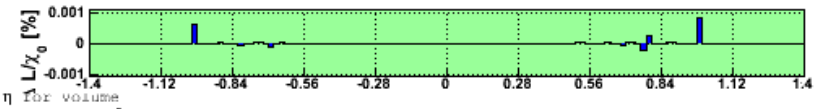

Radiation length differential vs η for volume

# 18 Validation Summary: Detector CALB in Geometry y2011

CSH2

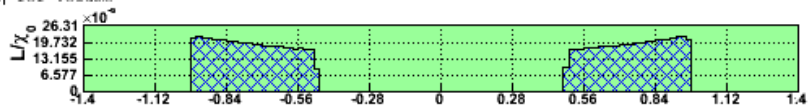



Material budget vs η for volume CSH2

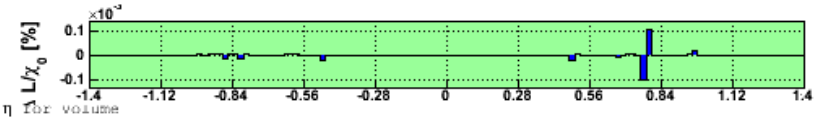



Radiation length differential vs η for volume

CSH3

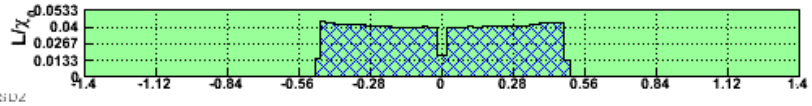



Material budget vs η for volume CSH3

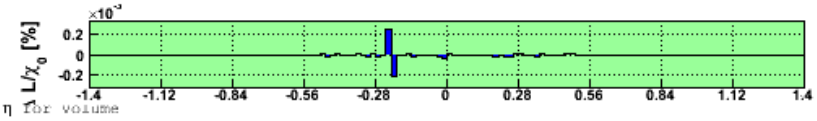



Radiation length differential vs η for volume

CSD2

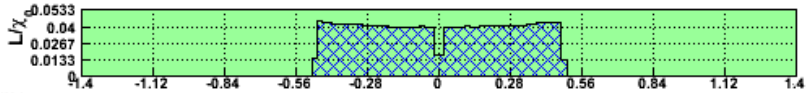



Material budget vs η for volume CSD2

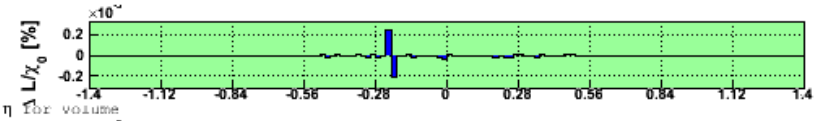



Radiation length differential vs η for volume

CSM2

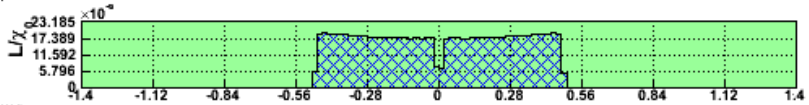



Material budget vs η for volume CSM2

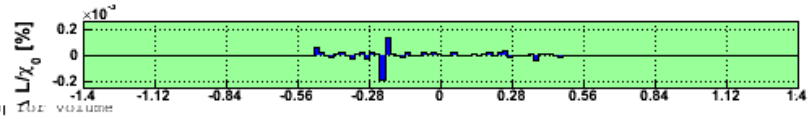



Radiation length differential vs η for volume

CSH4

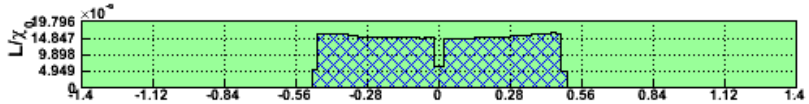



Material budget vs η for volume CSH4

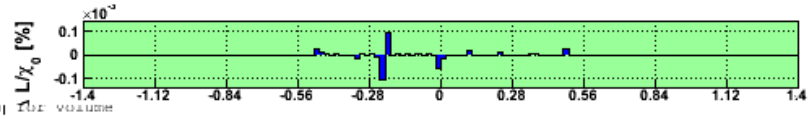



Radiation length differential vs η for volume

CSH5

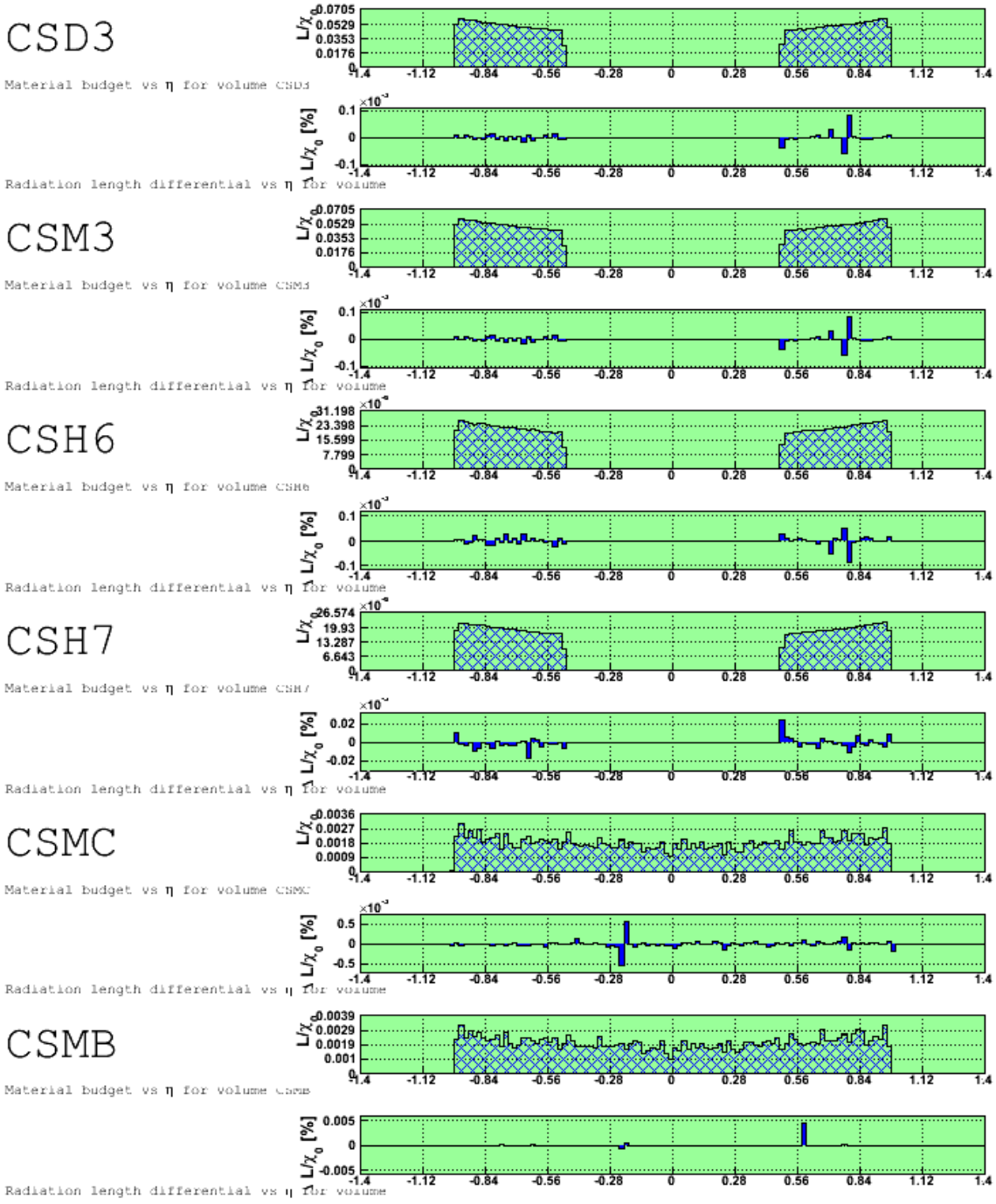



Material budget vs η for volume CSH5



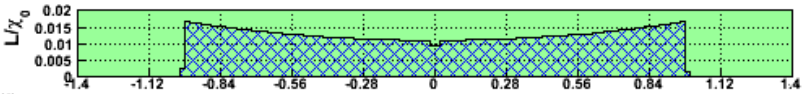

Radiation length differential vs η for volume

# 19 Validation Summary: Detector CALB in Geometry y2011

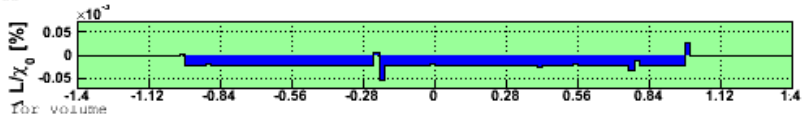


# 20 Validation Summary: Detector CALB in Geometry y2011

CSC5

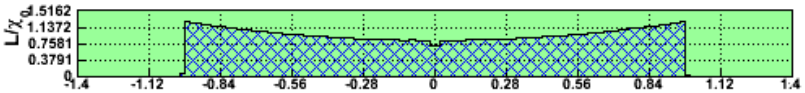



Material budget vs η for volume CSC5

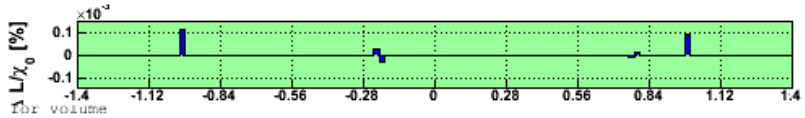



Radiation length differential vs η for volume

CPB5

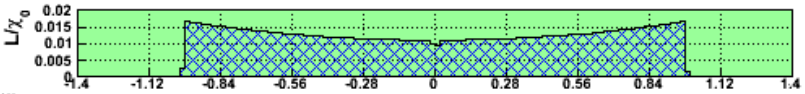



Material budget vs η for volume CPB5

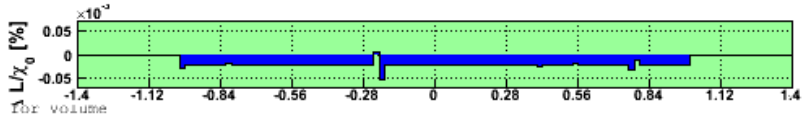



Radiation length differential vs η for volume

CSC6

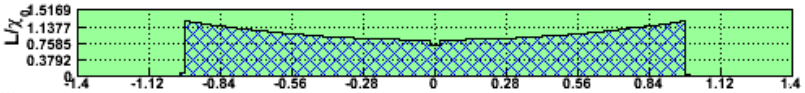



Material budget vs η for volume CSC6

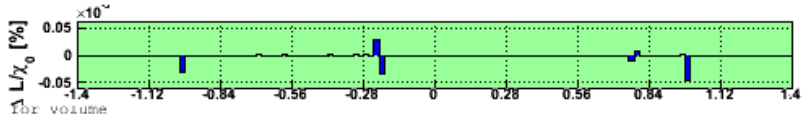



Radiation length differential vs η for volume

CPB6

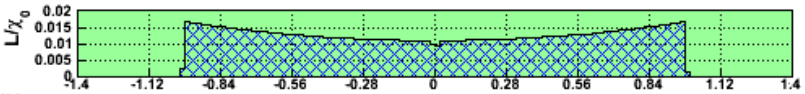



Material budget vs η for volume CPB6

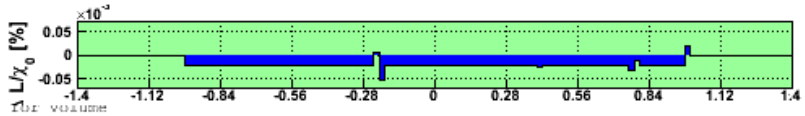



Radiation length differential vs η for volume

CSC7

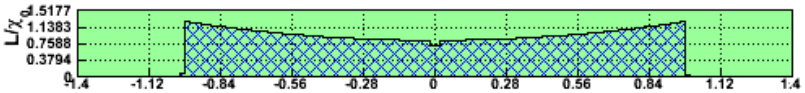



Material budget vs η for volume CSC7

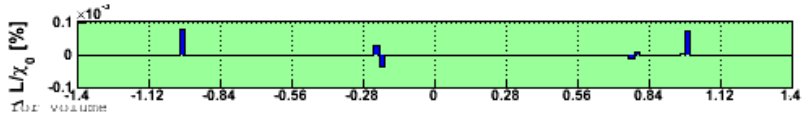



Radiation length differential vs η for volume

CPB7



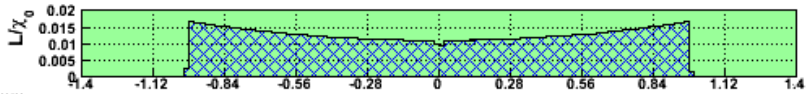

Material budget vs η for volume CPB7



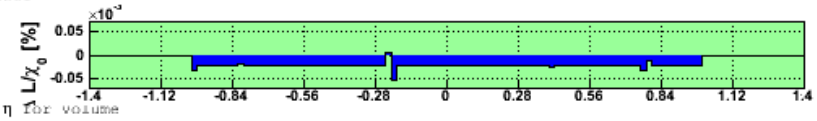

Radiation length differential vs η for volume

# 21 Validation Summary: Detector CALB in Geometry y2011

CSC8

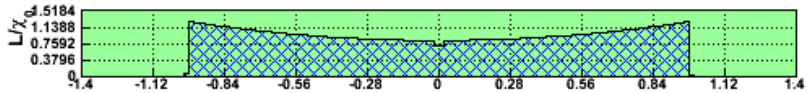



Material budget vs η for volume CSC8

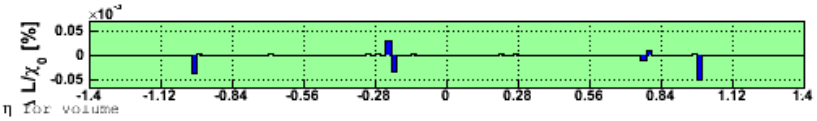



Radiation length differential vs η for volume

CPB8

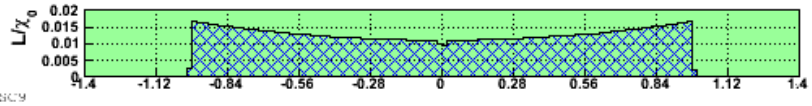



Material budget vs η for volume CPB8

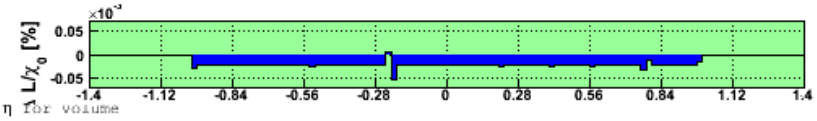



Radiation length differential vs η for volume

CSC9

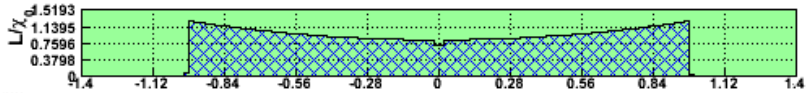



Material budget vs η for volume CSC9

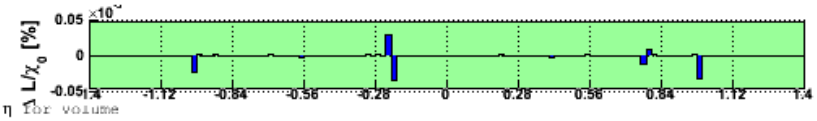



Radiation length differential vs η for volume

CPB9

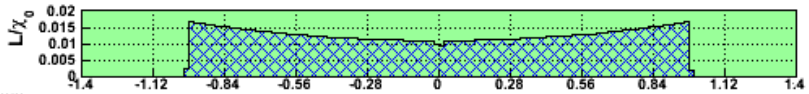



Material budget vs η for volume CPB9

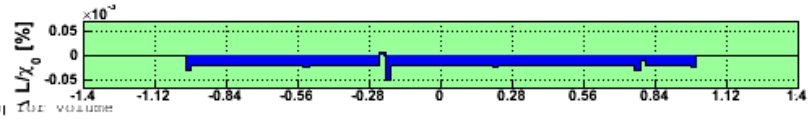



Radiation length differential vs η for volume

CSC0

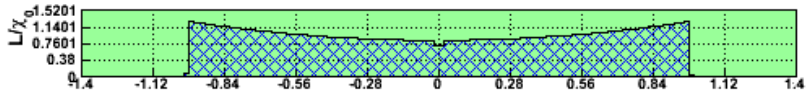



Material budget vs η for volume CSC0

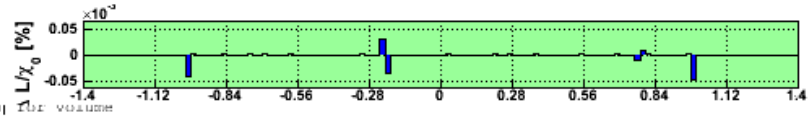



Radiation length differential vs η for volume

CPB0



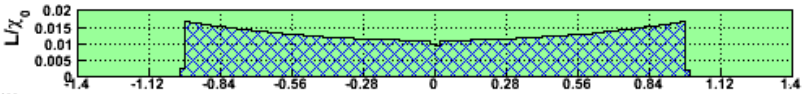

Material budget vs η for volume CPB0



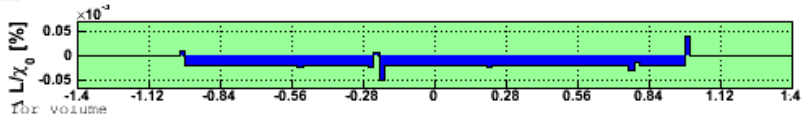

Radiation length differential vs η for volume

## 22 Validation Summary: Detector CALB in Geometry y2011

CSCa

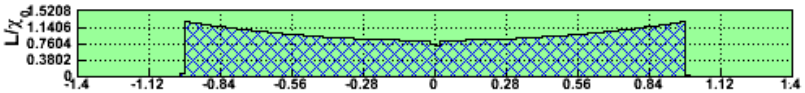



Material budget vs η for volume CSCa

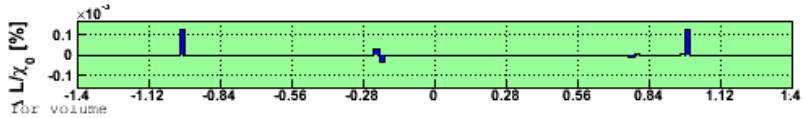



Radiation length differential vs η for volume

CPBa

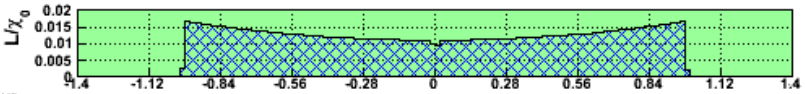



Material budget vs η for volume CPBa

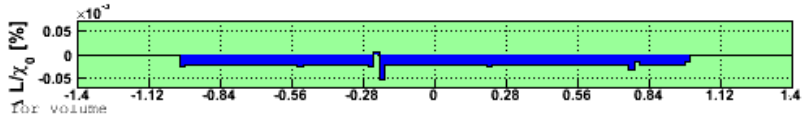



Radiation length differential vs η for volume

CSCb

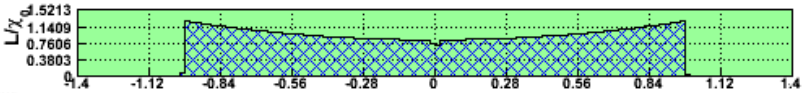



Material budget vs η for volume CSCb

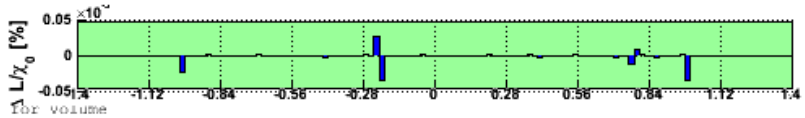



Radiation length differential vs η for volume

CPBb

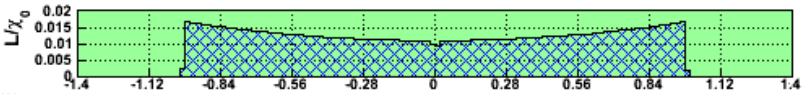



Material budget vs η for volume CPBb

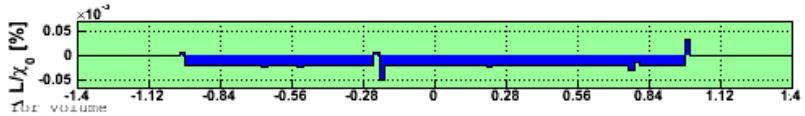



Radiation length differential vs η for volume

CSCc

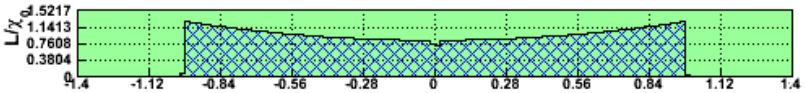



Material budget vs η for volume CSCc

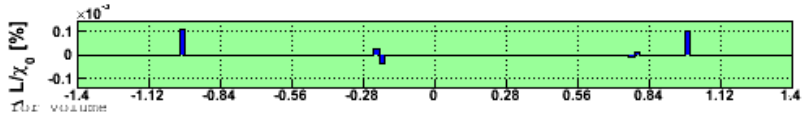



Radiation length differential vs η for volume

CPBc



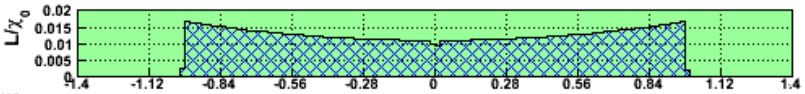

Material budget vs η for volume CPBc



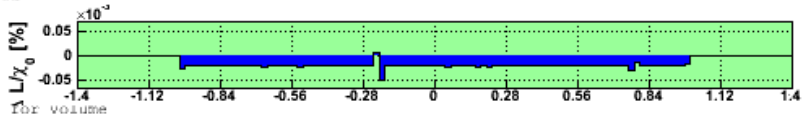

Radiation length differential vs η for volume

# 23 Validation Summary: Detector CALB in Geometry y2011

CSCd

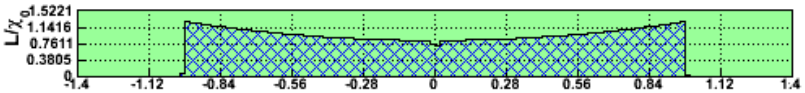



Material budget vs η for volume CSCd

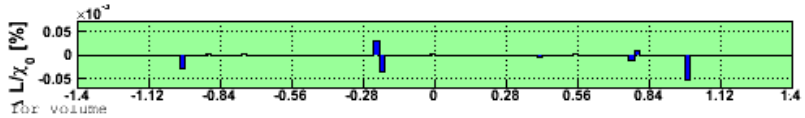



Radiation length differential vs η for volume

CPBd

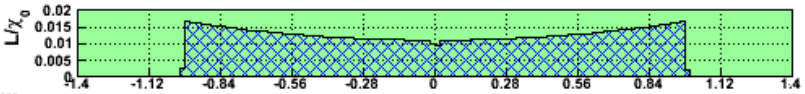



Material budget vs η for volume CPBd

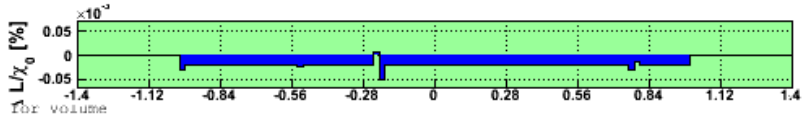



Radiation length differential vs η for volume

CSCe

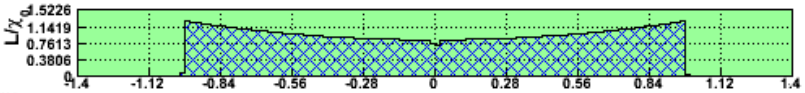



Material budget vs η for volume CSCe

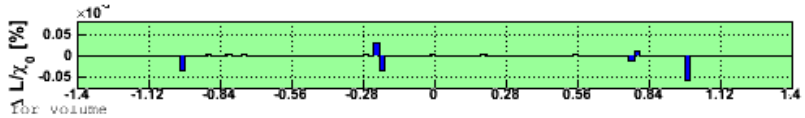



Radiation length differential vs η for volume

CPBe

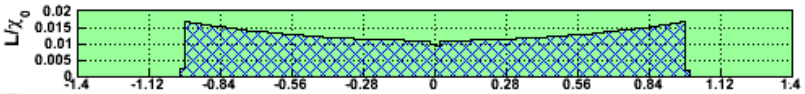



Material budget vs η for volume CPBe

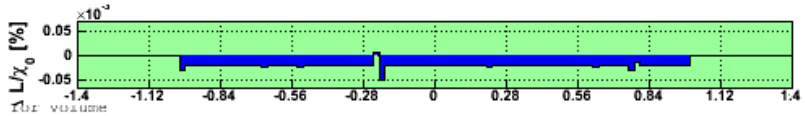



Radiation length differential vs η for volume

CSCf

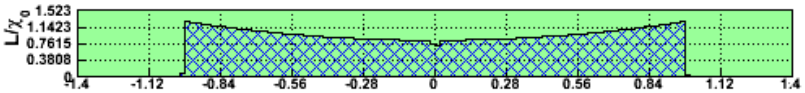



Material budget vs η for volume CSCf

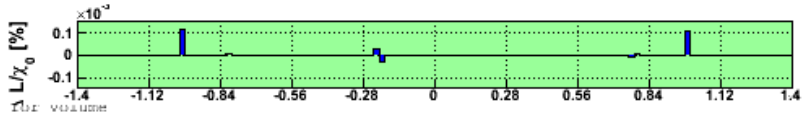



Radiation length differential vs η for volume

CPBf



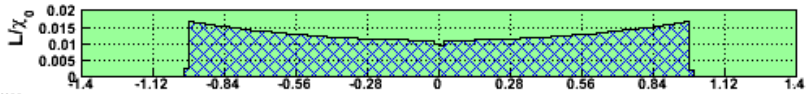

Material budget vs η for volume CPBf



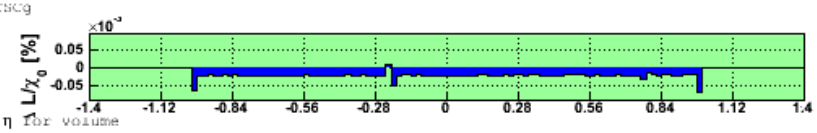

Radiation length differential vs η for volume

# 24 Validation Summary: Detector CALB in Geometry y2011

CSCg

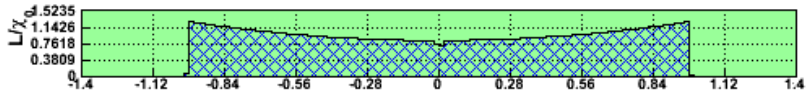



Material budget vs η for volume CSCg

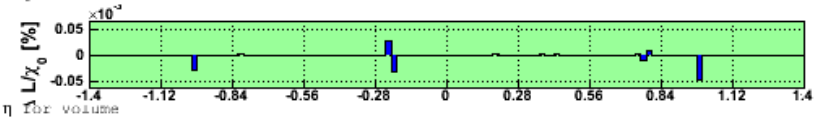



Radiation length differential vs η for volume

CPBg

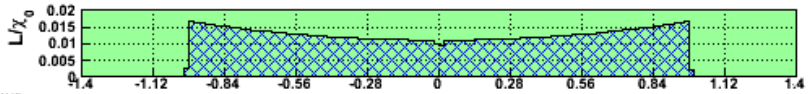



Material budget vs η for volume CPBg

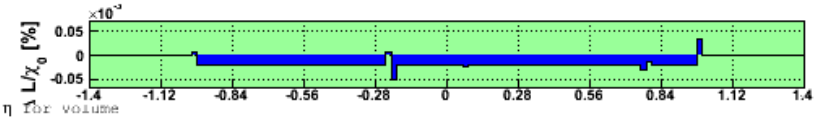



Radiation length differential vs η for volume

CSCh

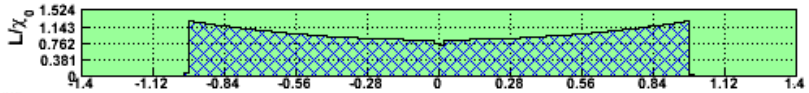



Material budget vs η for volume CSCh

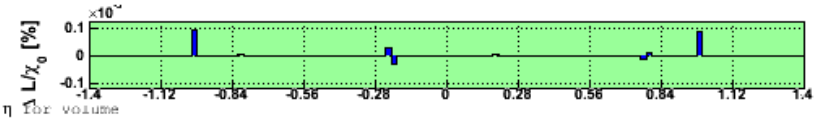



Radiation length differential vs η for volume

CPBh

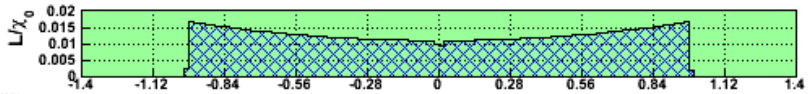



Material budget vs η for volume CPBh

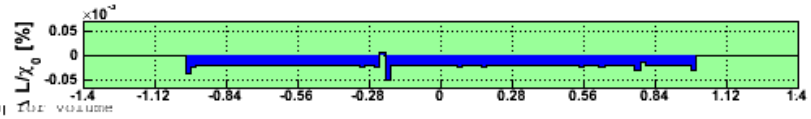



Radiation length differential vs η for volume

CSCi

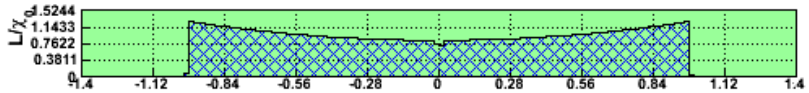



Material budget vs η for volume CSCi

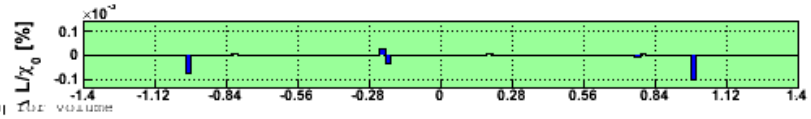



Radiation length differential vs η for volume

CPBi



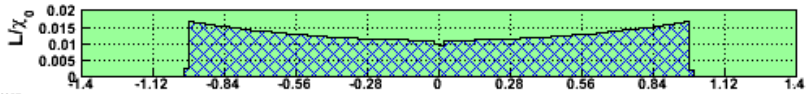

Material budget vs η for volume CPBi



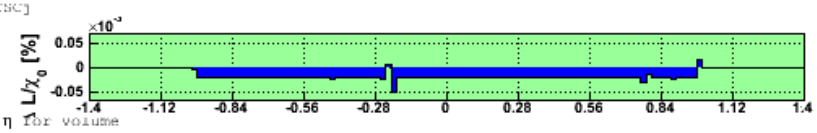

Radiation length differential vs η for volume

# 25 Validation Summary: Detector CALB in Geometry y2011

CSCj

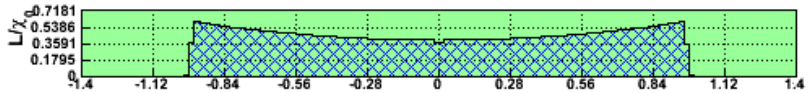



Material budget vs η for volume CSCj

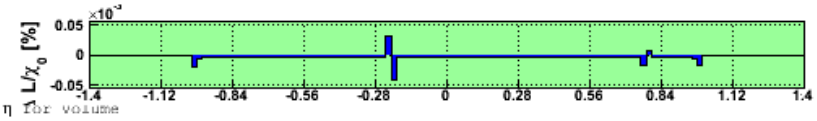



Radiation length differential vs η for volume

CBT1

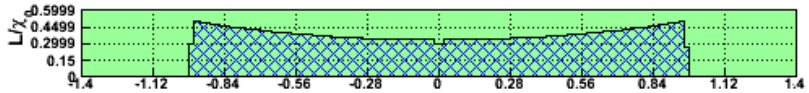



Material budget vs η for volume CBT1

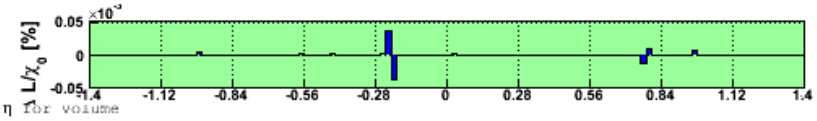



Radiation length differential vs η for volume

CBT2

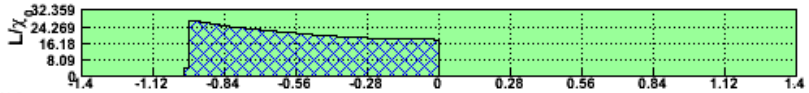



Material budget vs η for volume CBT2

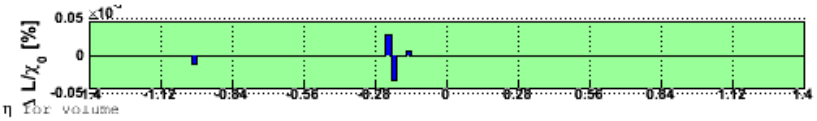



Radiation length differential vs η for volume

CHL1

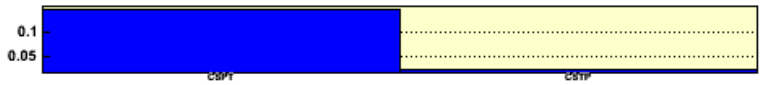



Material budget vs η for volume CHL1




Radiation length differential vs η for volume

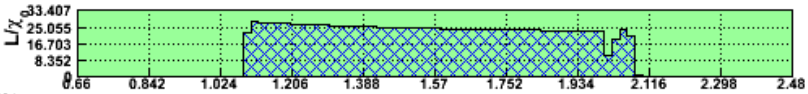
SUMMARY



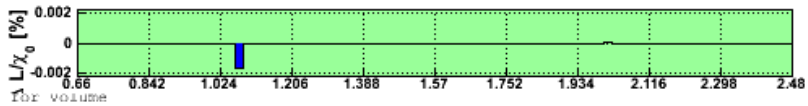

Summary of volumes above 0.5 * threshold

# 26 Validation Summary: Detector ECAL in Geometry y2011

ECAL

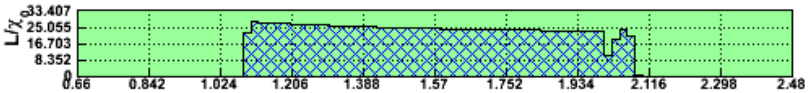



Material budget vs η for volume ECAL

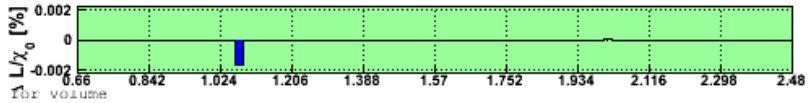



Radiation length differential vs η for volume

EAGA

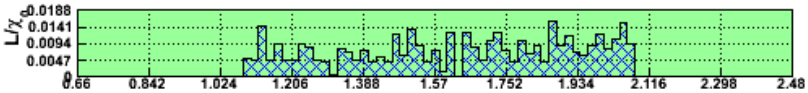



Material budget vs η for volume EAGA

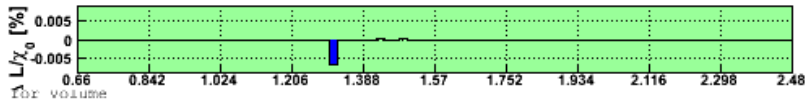



Radiation length differential vs η for volume

ECGH

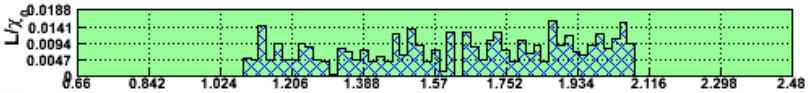



Material budget vs η for volume ECGH

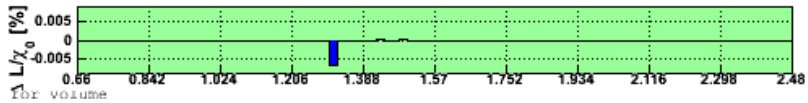



Radiation length differential vs η for volume

ECHC

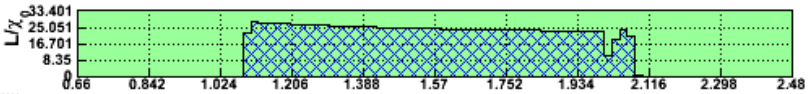



Material budget vs η for volume ECHC

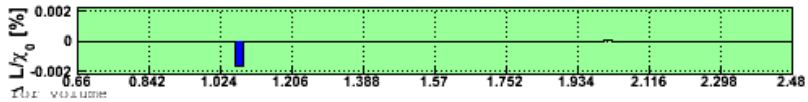



Radiation length differential vs η for volume

EMSS

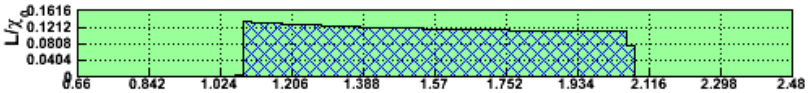



Material budget vs η for volume EMSS

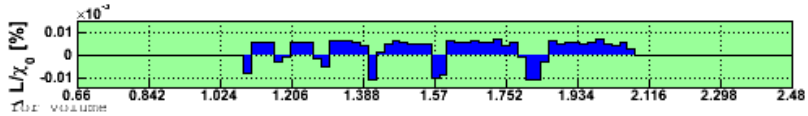



Radiation length differential vs η for volume

EFLP



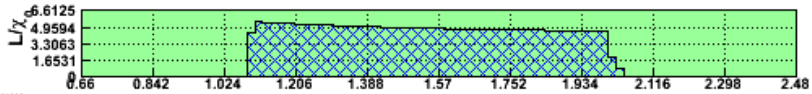

Material budget vs η for volume EFLP



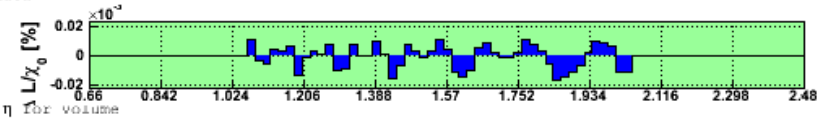

Radiation length differential vs η for volume

# 27 Validation Summary: Detector ECAL in Geometry y2011

ECVO

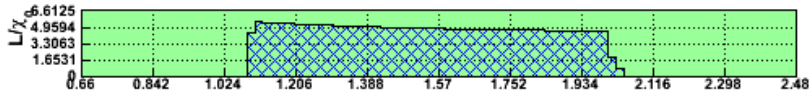



Material budget vs η for volume ECVO

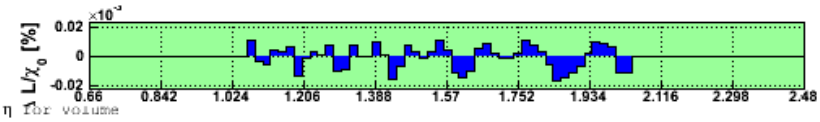



Radiation length differential vs η for volume

EMOD

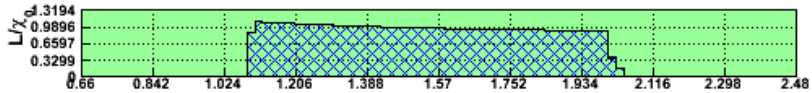



Material budget vs η for volume EMOD

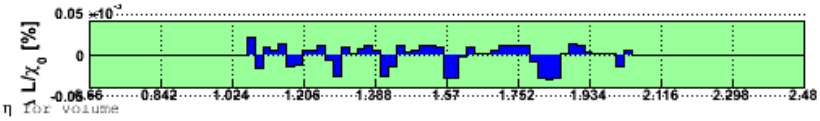



Radiation length differential vs η for volume

ESEC

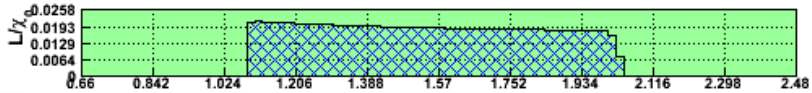



Material budget vs η for volume ESEC

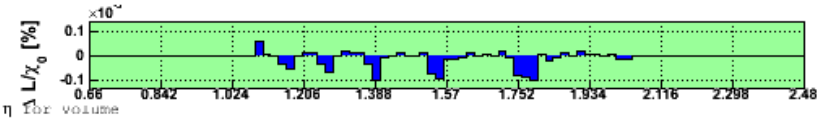



Radiation length differential vs η for volume

EMGT

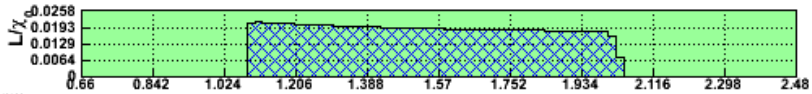



Material budget vs η for volume EMGT

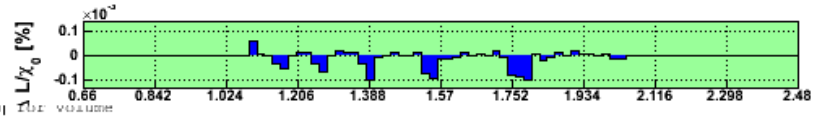



Radiation length differential vs η for volume

EPER

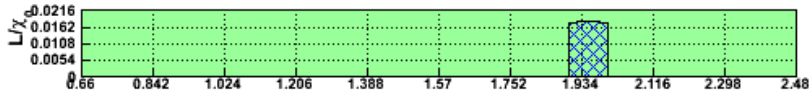



Material budget vs η for volume EPER

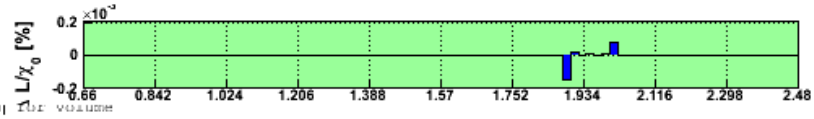



Radiation length differential vs η for volume

ETAR



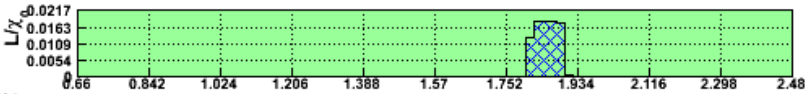

Material budget vs η for volume ETAR



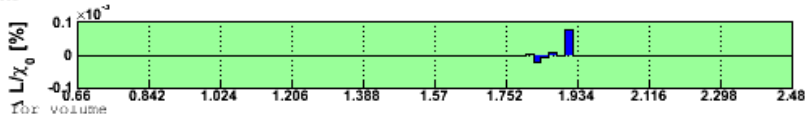

Radiation length differential vs η for volume

# 28 Validation Summary: Detector ECAL in Geometry y2011

ETA1

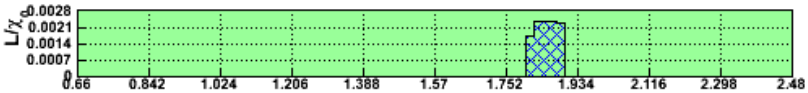



Material budget vs η for volume ETA1

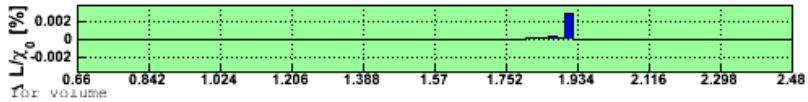



Radiation length differential vs η for volume

EAL1

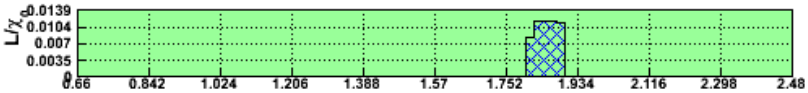



Material budget vs η for volume EAL1

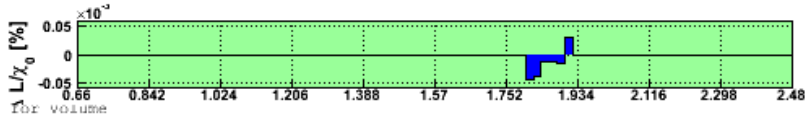



Radiation length differential vs η for volume

ESC1

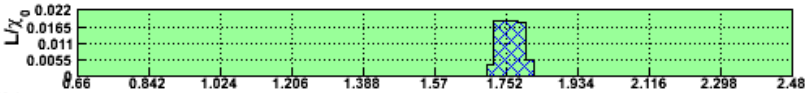



Material budget vs η for volume ESC1

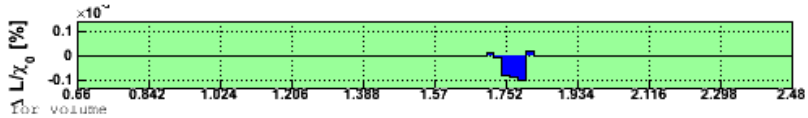



Radiation length differential vs η for volume

ETA2

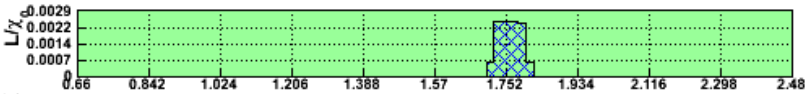



Material budget vs η for volume ETA2

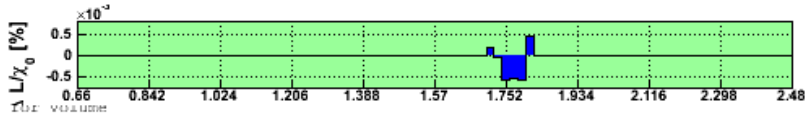



Radiation length differential vs η for volume

EAL2

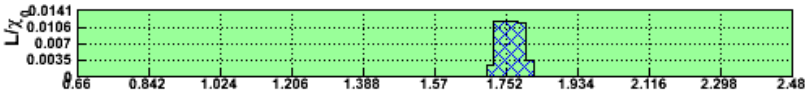



Material budget vs η for volume EAL2

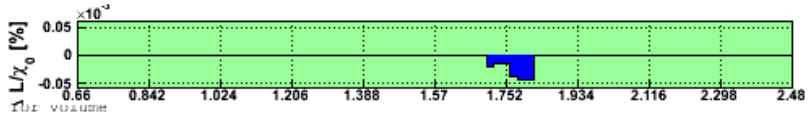



Radiation length differential vs η for volume

ESC2



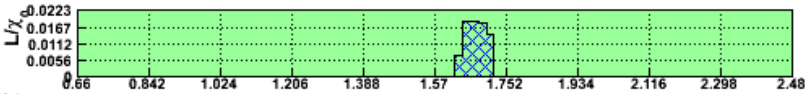

Material budget vs η for volume ESC2



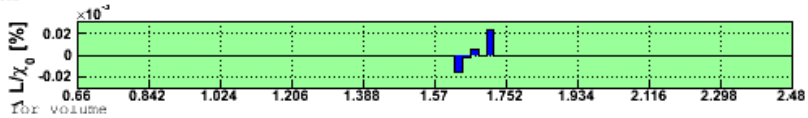

Radiation length differential vs η for volume

# 29 Validation Summary: Detector ECAL in Geometry y2011

ETA3

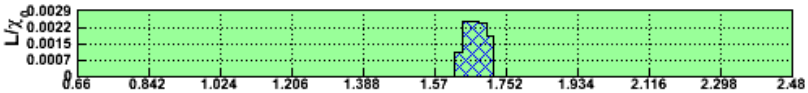



Material budget vs η for volume ETA3

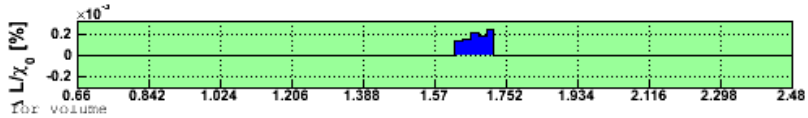



Radiation length differential vs η for volume

EAL3

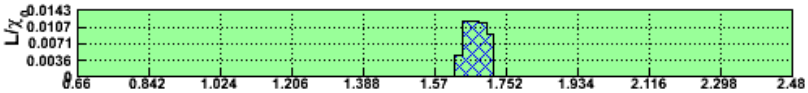



Material budget vs η for volume EAL3

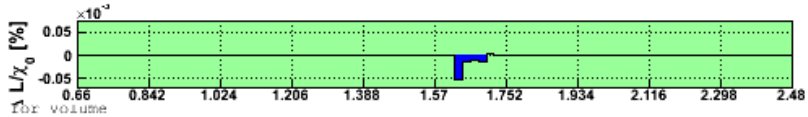



Radiation length differential vs η for volume

ESC3

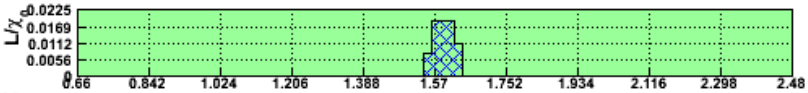



Material budget vs η for volume ESC3

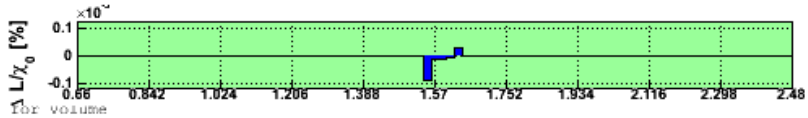



Radiation length differential vs η for volume

ETA4

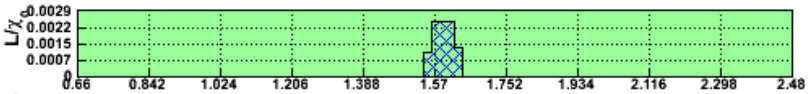



Material budget vs η for volume ETA4

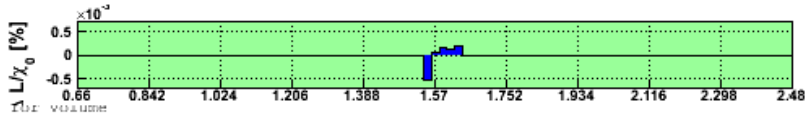



Radiation length differential vs η for volume

EAL4

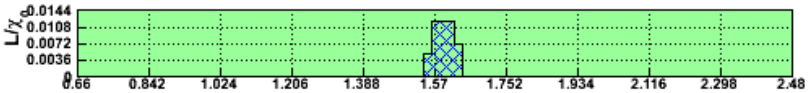



Material budget vs η for volume EAL4

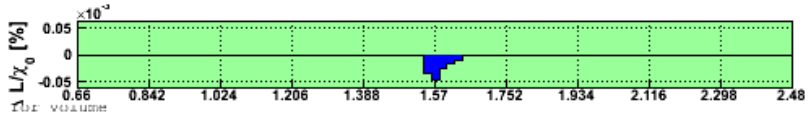



Radiation length differential vs η for volume

ESC4

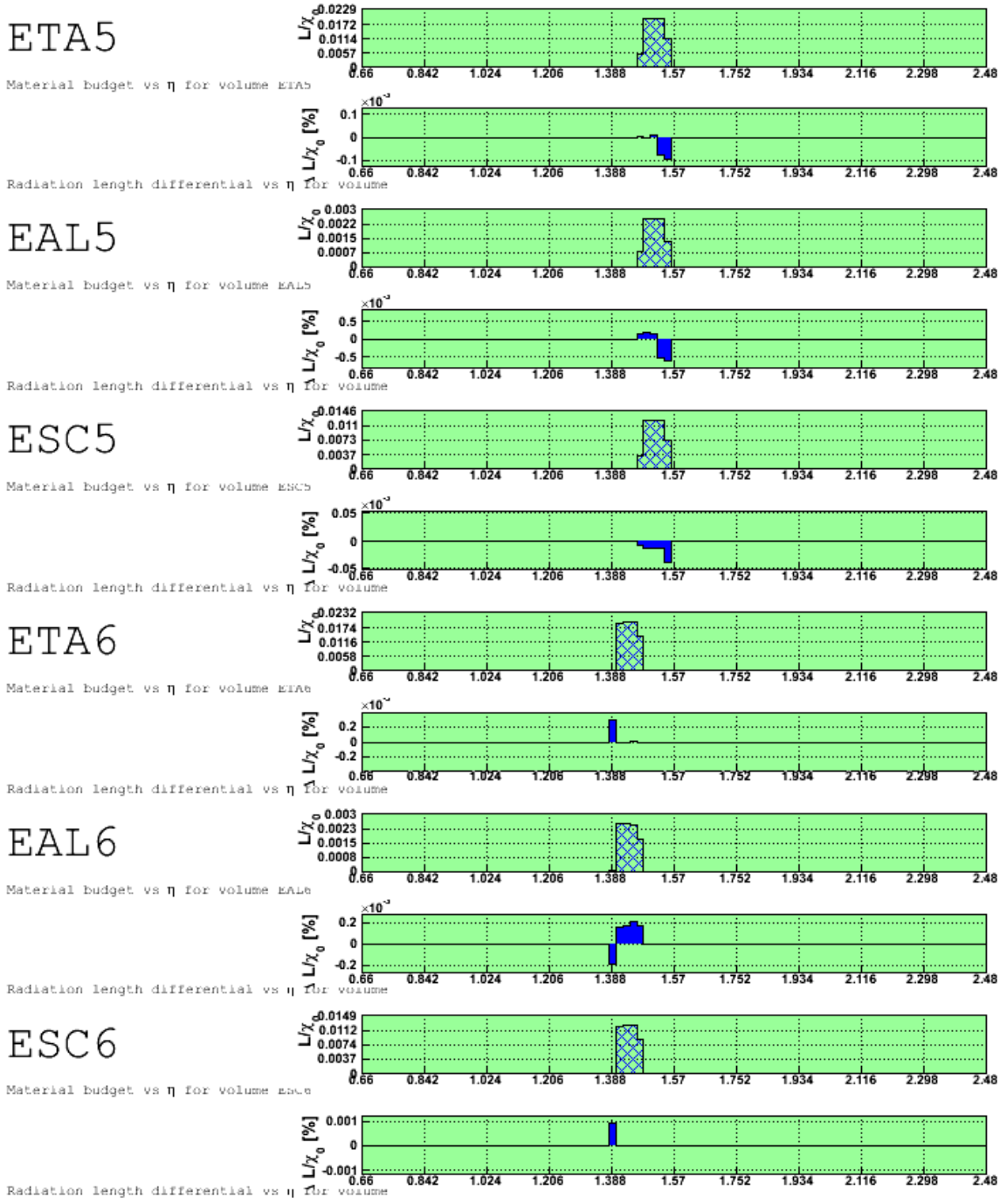



Material budget vs η for volume ESC4



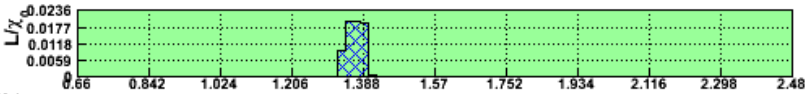

Radiation length differential vs η for volume

# 30 Validation Summary: Detector ECAL in Geometry y2011

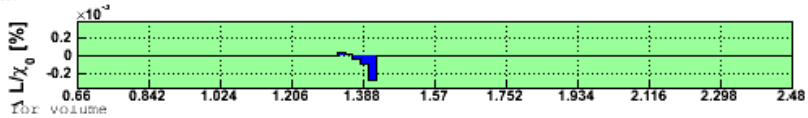


# 31 Validation Summary: Detector ECAL in Geometry y2011

ETA7

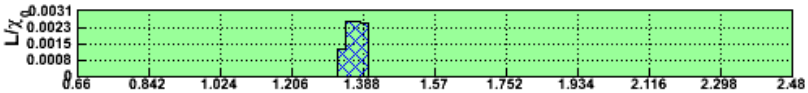



Material budget vs η for volume ETA7

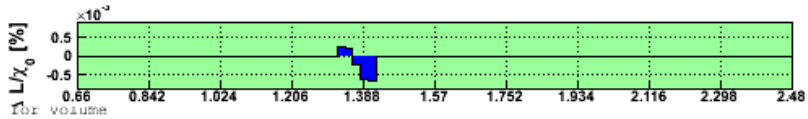



Radiation length differential vs η for volume

EAL7

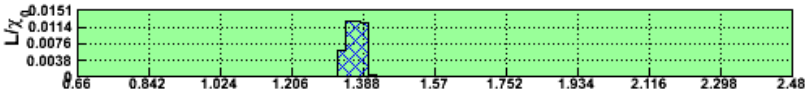



Material budget vs η for volume EAL7

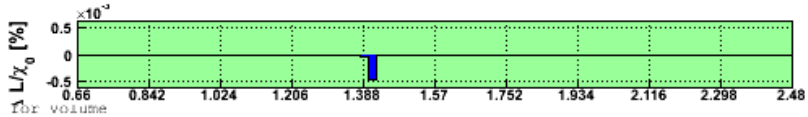



Radiation length differential vs η for volume

ESC7

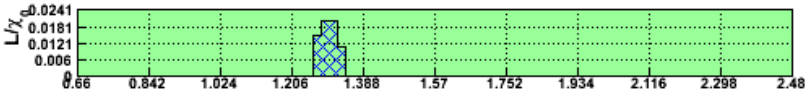



Material budget vs η for volume ESC7

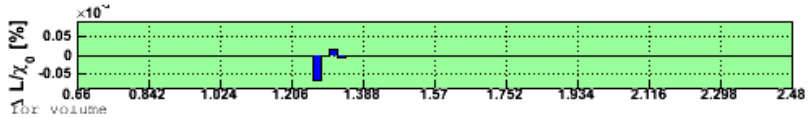



Radiation length differential vs η for volume

ETA8

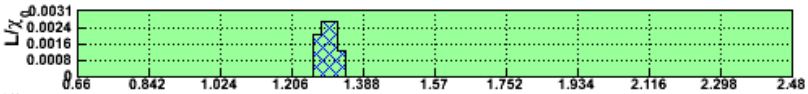



Material budget vs η for volume ETA8

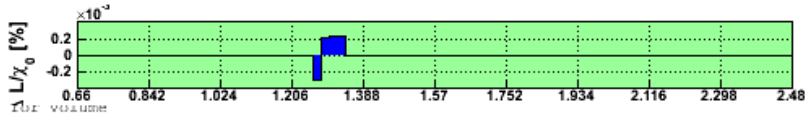



Radiation length differential vs η for volume

EAL8

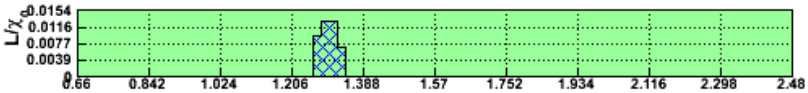



Material budget vs η for volume EAL8

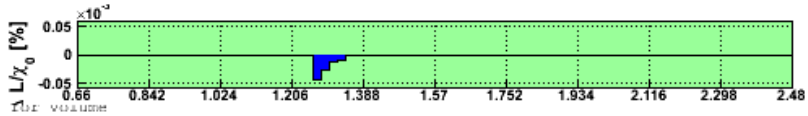



Radiation length differential vs η for volume

ESC8



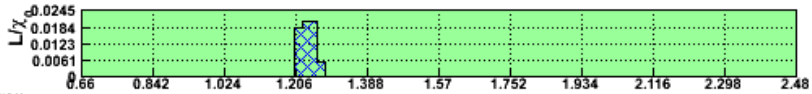

Material budget vs η for volume ESC8



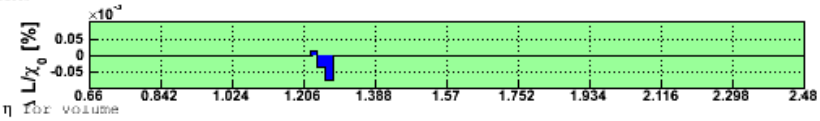

Radiation length differential vs η for volume

# 32 Validation Summary: Detector ECAL in Geometry y2011

ETA9

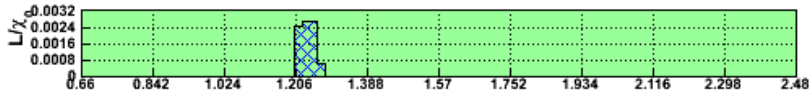



Material budget vs η for volume ETA9

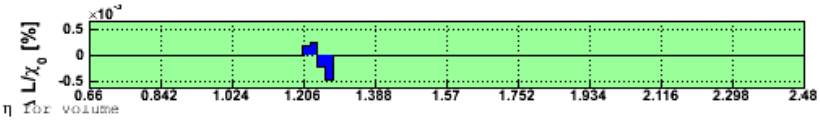



Radiation length differential vs η for volume

EAL9

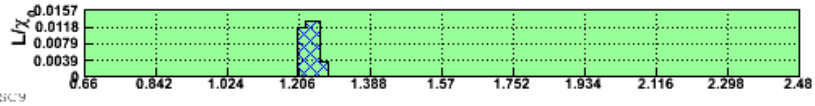



Material budget vs η for volume EAL9

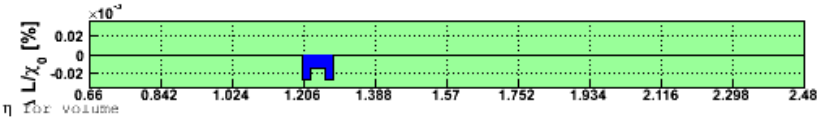



Radiation length differential vs η for volume

ESC9

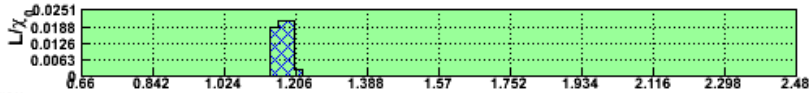



Material budget vs η for volume ESC9

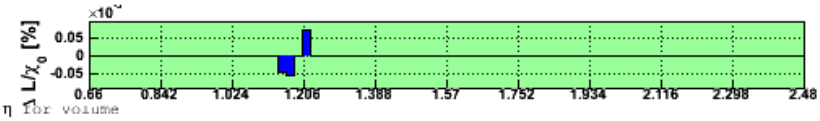



Radiation length differential vs η for volume

ETA0

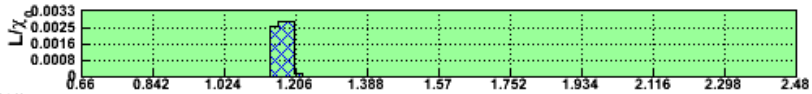



Material budget vs η for volume ETA0

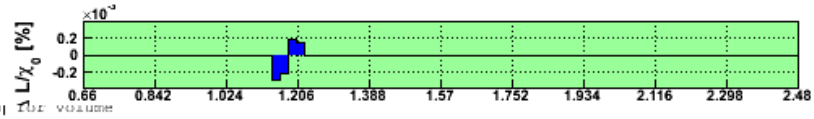



Radiation length differential vs η for volume

EAL0

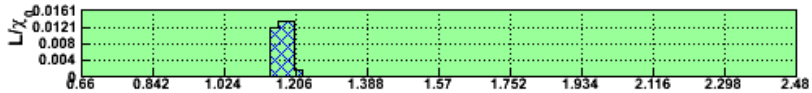



Material budget vs η for volume EAL0

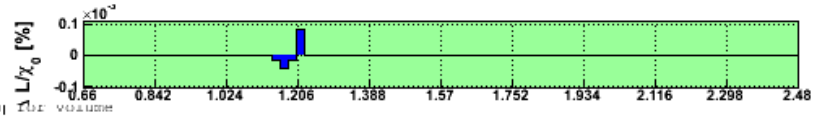



Radiation length differential vs η for volume

ESC0



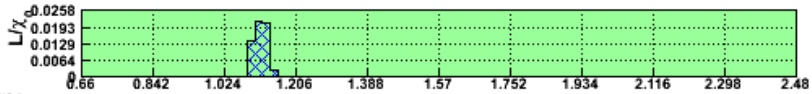

Material budget vs η for volume ESC0



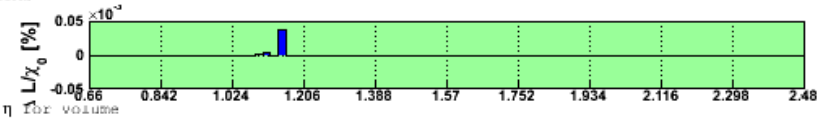

Radiation length differential vs η for volume

# 33 Validation Summary: Detector ECAL in Geometry y2011

ETAa

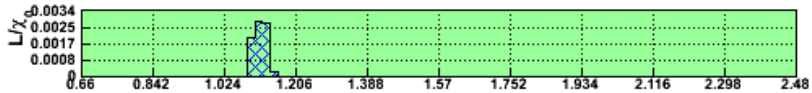



Material budget vs η for volume ETAa

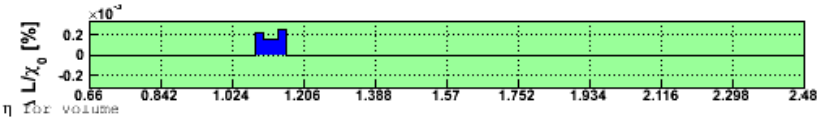



Radiation length differential vs η for volume

EALa

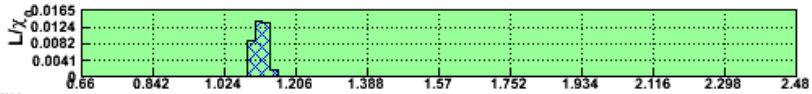



Material budget vs η for volume EALa

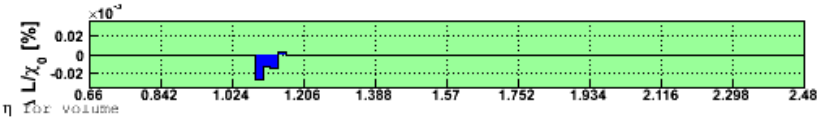



Radiation length differential vs η for volume

ESCa

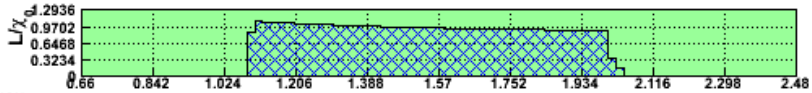



Material budget vs η for volume ESCa

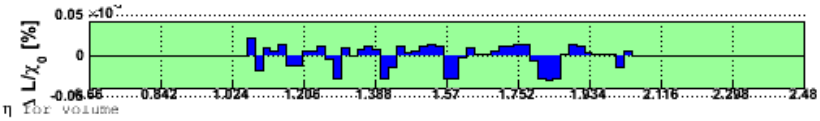



Radiation length differential vs η for volume

ERAD

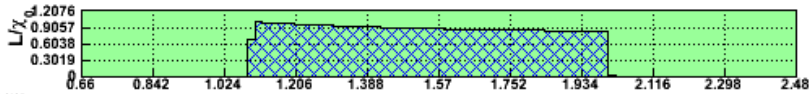



Material budget vs η for volume ERAD

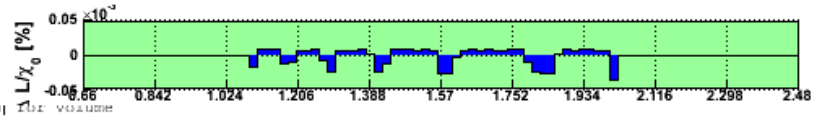



Radiation length differential vs η for volume

ELED

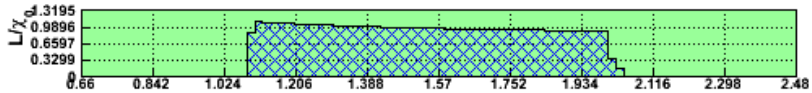



Material budget vs η for volume ELED

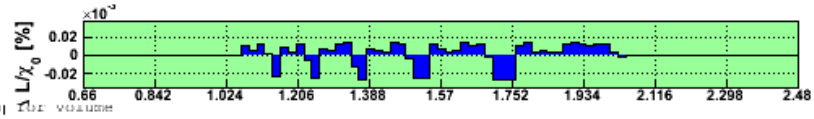



Radiation length differential vs η for volume

ESE1



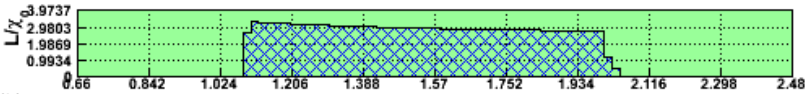

Material budget vs η for volume ESE1



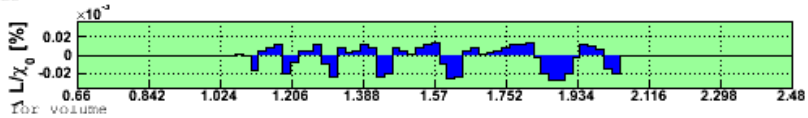

Radiation length differential vs η for volume

# 34 Validation Summary: Detector ECAL in Geometry y2011

ESE2

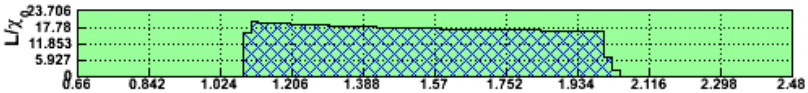



Material budget vs η for volume ESE2

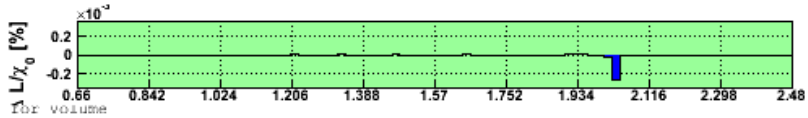



Radiation length differential vs η for volume

ECV1

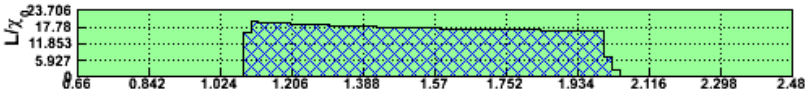



Material budget vs η for volume ECV1

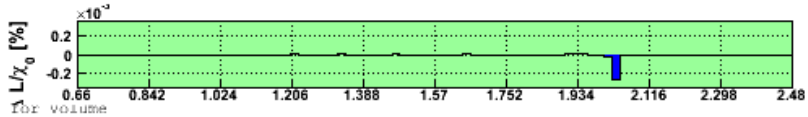



Radiation length differential vs η for volume

EMO1

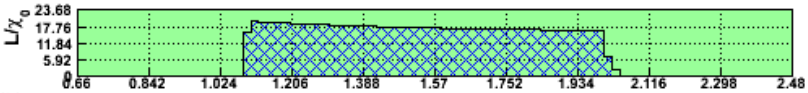



Material budget vs η for volume EMO1

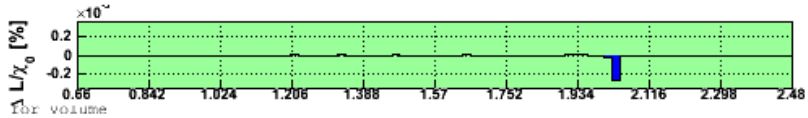



Radiation length differential vs η for volume

ESE3

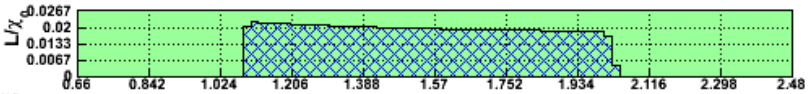



Material budget vs η for volume ESE3

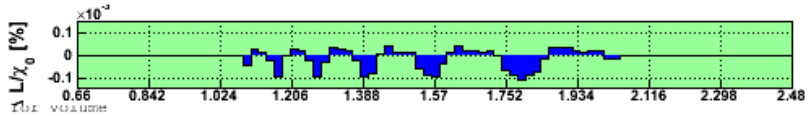



Radiation length differential vs η for volume

ESE4

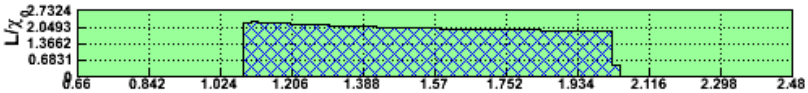



Material budget vs η for volume ESE4

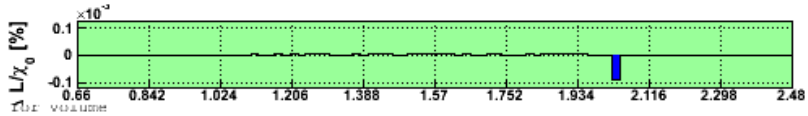



Radiation length differential vs η for volume

ESSP

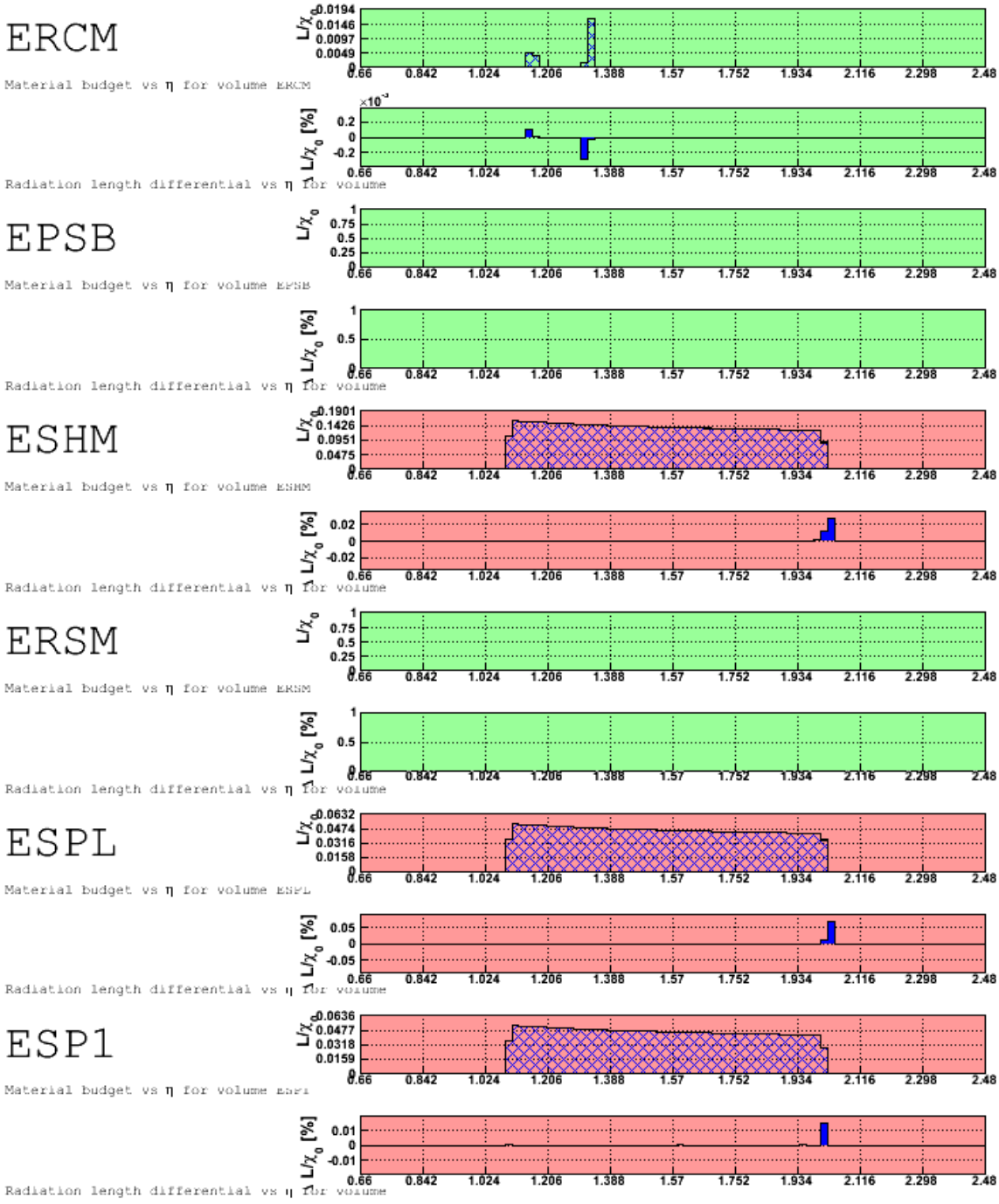



Material budget vs η for volume ESSP



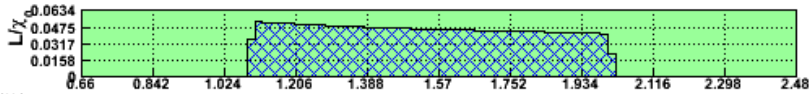

Radiation length differential vs η for volume

# 35 Validation Summary: Detector ECAL in Geometry y2011

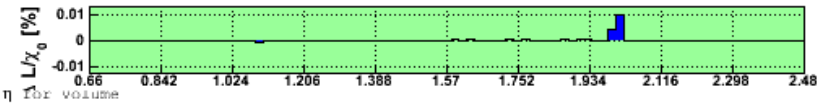


# 36 Validation Summary: Detector ECAL in Geometry y2011

ESP2

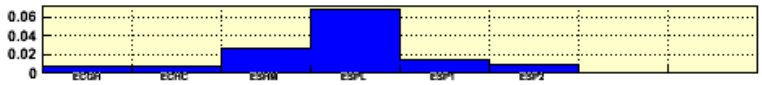



Material budget vs η for volume ESP2




Radiation length differential vs η for volume

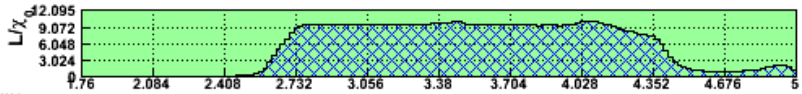
SUMMARY



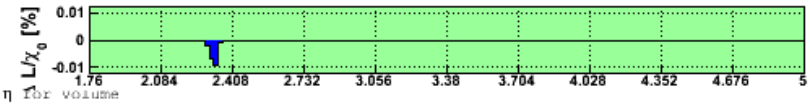

Summary of volumes above 0.5 * threshold

# 37 Validation Summary: Detector FBO1 in Geometry y2011

FBO1

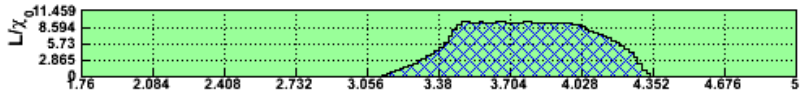



Material budget vs η for volume FBO1

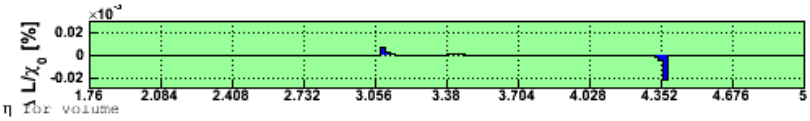



Radiation length differential vs η for volume

FTOW

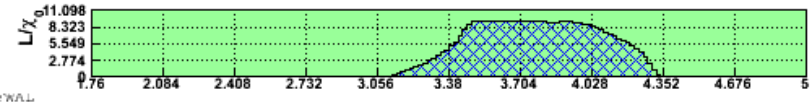



Material budget vs η for volume FTOW

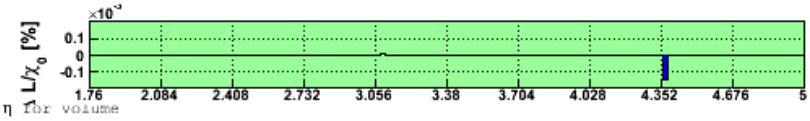



Radiation length differential vs η for volume

FWAL

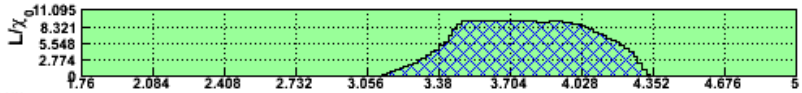



Material budget vs η for volume FWAL

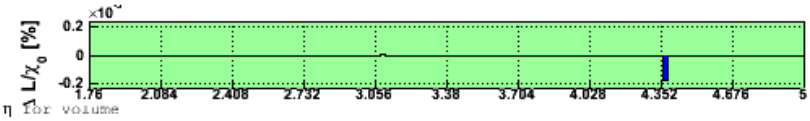



Radiation length differential vs η for volume

FLGR

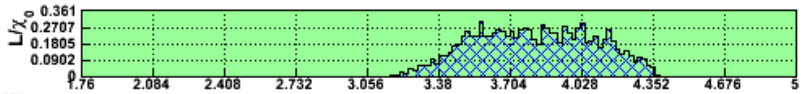



Material budget vs η for volume FLGR

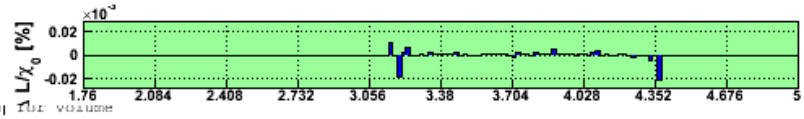



Radiation length differential vs η for volume

FUMT

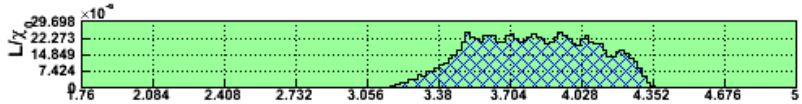



Material budget vs η for volume FUMT

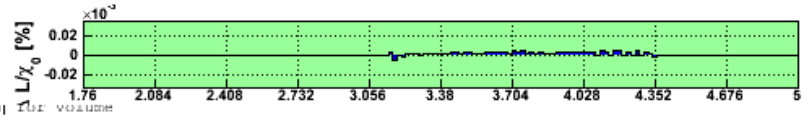



Radiation length differential vs η for volume

FPCT



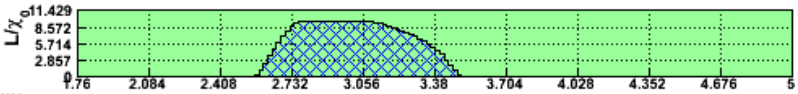

Material budget vs η for volume FPCT



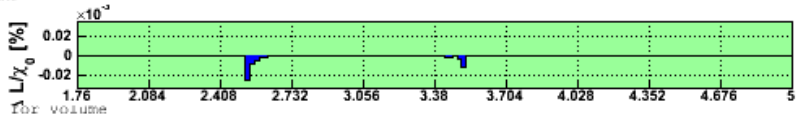

Radiation length differential vs η for volume

# 38 Validation Summary: Detector FBO1 in Geometry y2011

FLXF

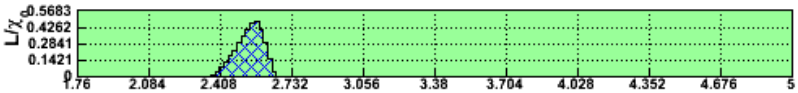



Material budget vs η for volume FLXF

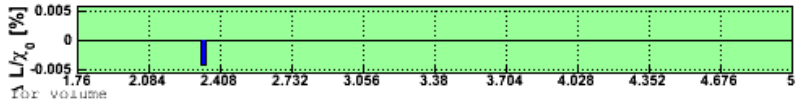



Radiation length differential vs η for volume

FALU

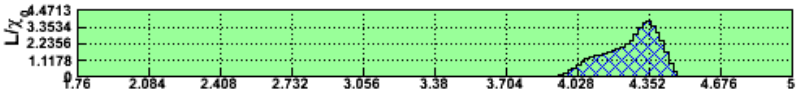



Material budget vs η for volume FALU

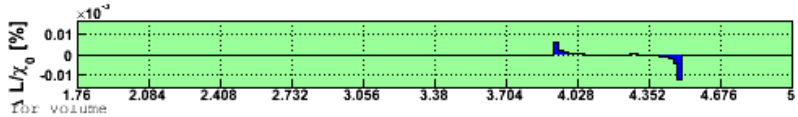



Radiation length differential vs η for volume

FENC

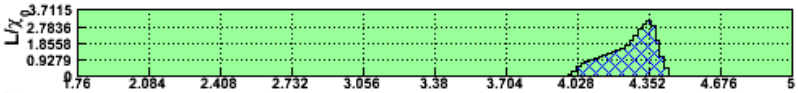



Material budget vs η for volume FENC

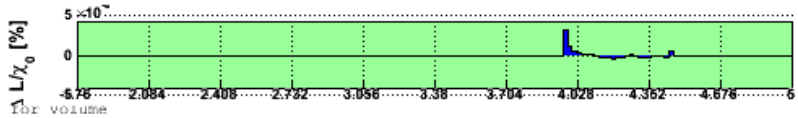



Radiation length differential vs η for volume

FEAC

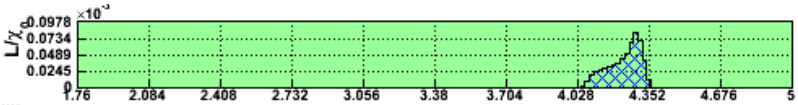



Material budget vs η for volume FEAC

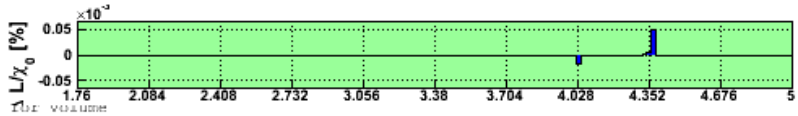



Radiation length differential vs η for volume

FEBC

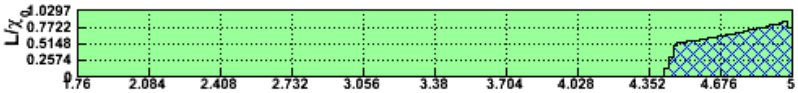



Material budget vs η for volume FEBC

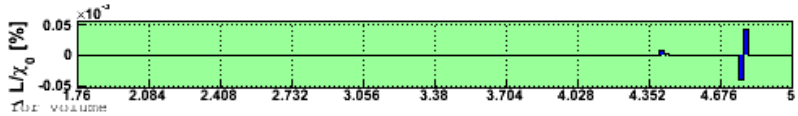



Radiation length differential vs η for volume

FECC

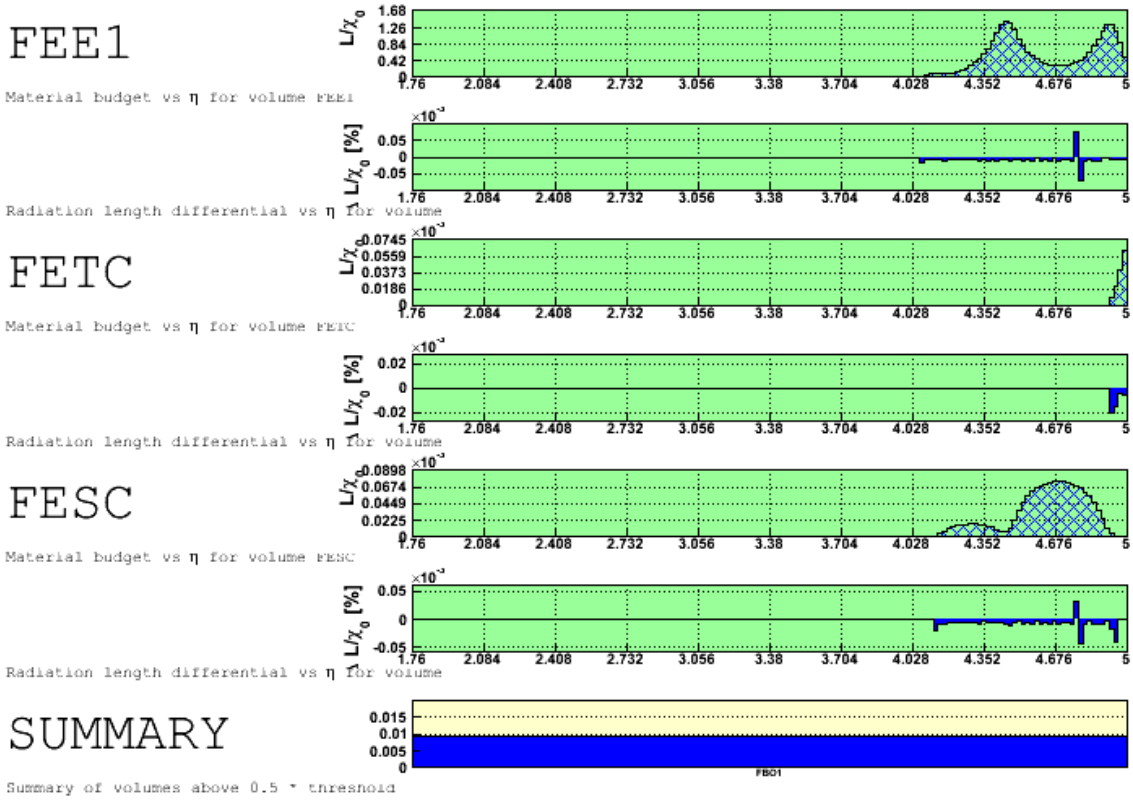



Material budget vs η for volume FECC



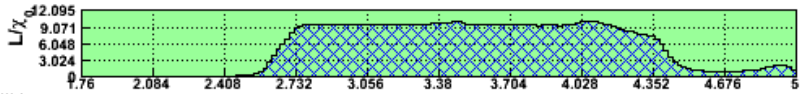

Radiation length differential vs η for volume

# 39 Validation Summary: Detector FBO1 in Geometry y2011

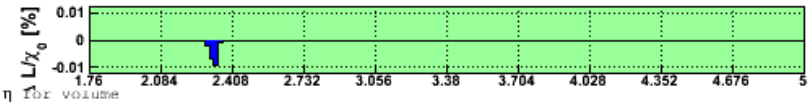


# 40 Validation Summary: Detector FBO2 in Geometry y2011

FBO2

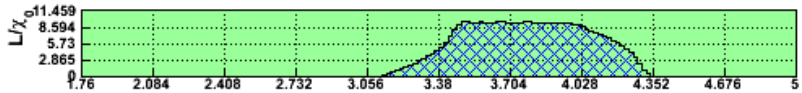



Material budget vs η for volume FBO2

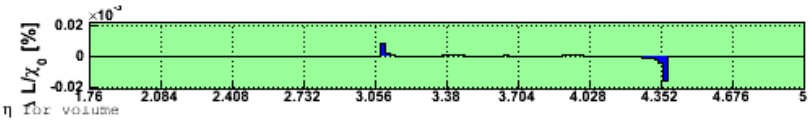



Radiation length differential vs η for volume

FTO1

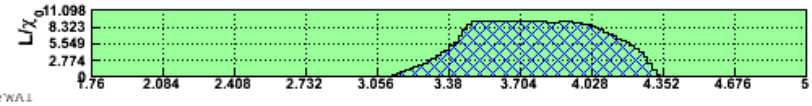



Material budget vs η for volume FTO1

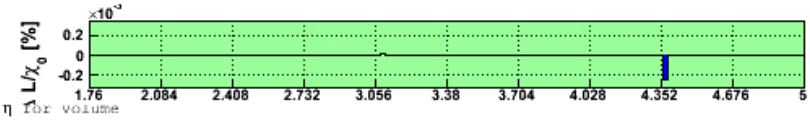



Radiation length differential vs η for volume

FWA1

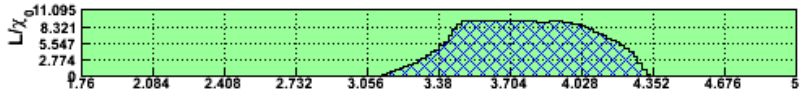



Material budget vs η for volume FWA1

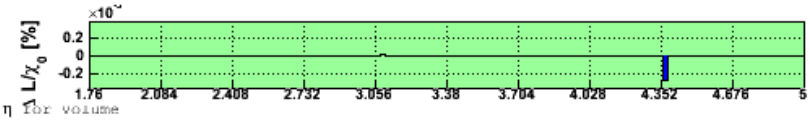



Radiation length differential vs η for volume

FLG1

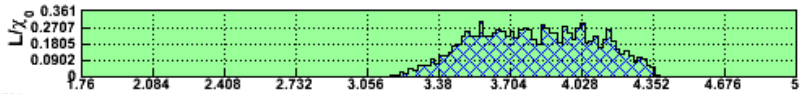



Material budget vs η for volume FLG1

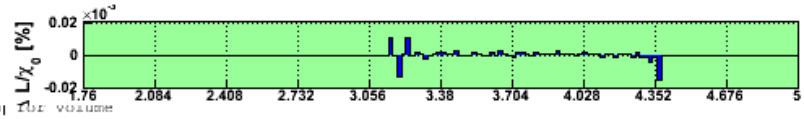



Radiation length differential vs η for volume

FUM1

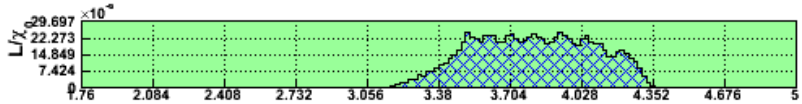



Material budget vs η for volume FUM1

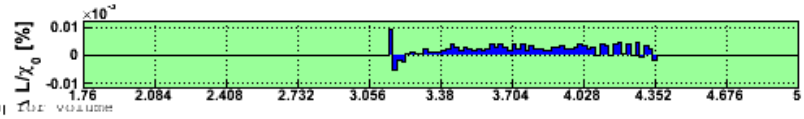



Radiation length differential vs η for volume

FPC1



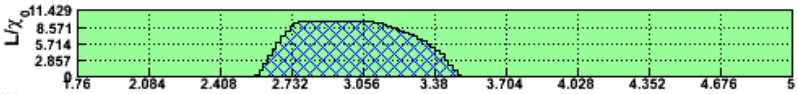

Material budget vs η for volume FPC1



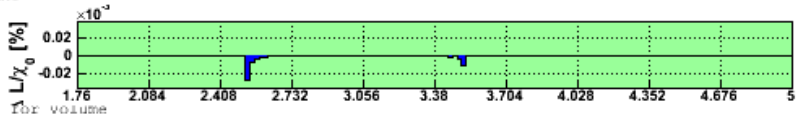

Radiation length differential vs η for volume

# 41 Validation Summary: Detector FBO2 in Geometry y2011

FLX1

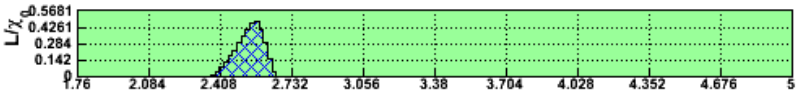



Material budget vs η for volume FLX1

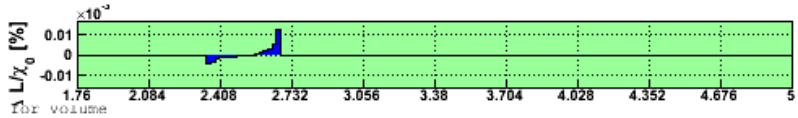



Radiation length differential vs η for volume

FAL1

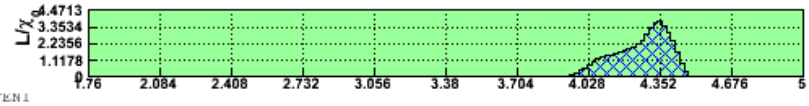



Material budget vs η for volume FAL1

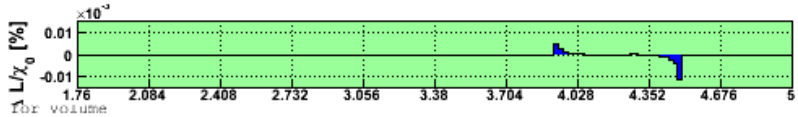



Radiation length differential vs η for volume

FEN1

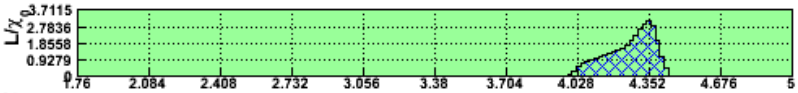



Material budget vs η for volume FEN1

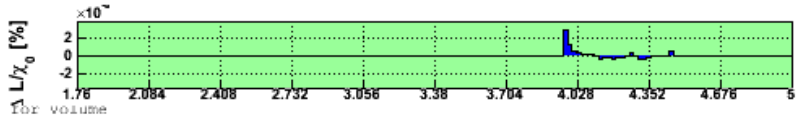



Radiation length differential vs η for volume

FEA1

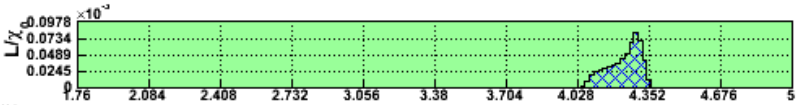



Material budget vs η for volume FEA1

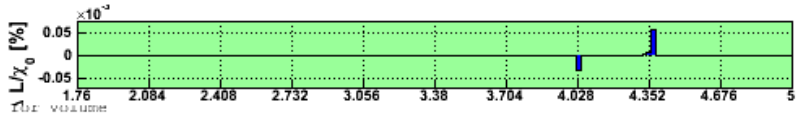



Radiation length differential vs η for volume

FEB1

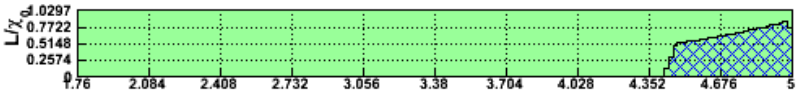



Material budget vs η for volume FEB1

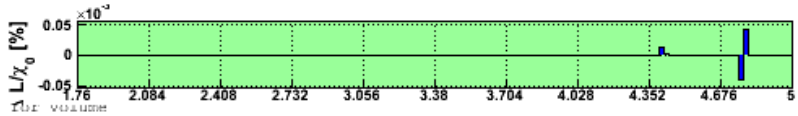



Radiation length differential vs η for volume

FEC1



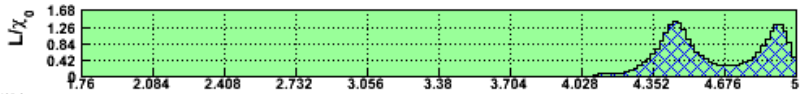

Material budget vs η for volume FEC1



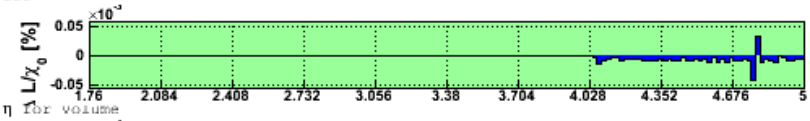

Radiation length differential vs η for volume

# 42 Validation Summary: Detector FBO2 in Geometry y2011

FED2

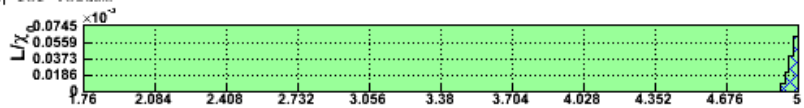



Material budget vs η for volume FED2

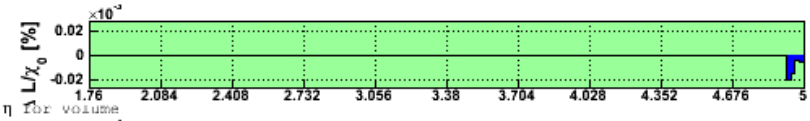



Radiation length differential vs η for volume

FER1

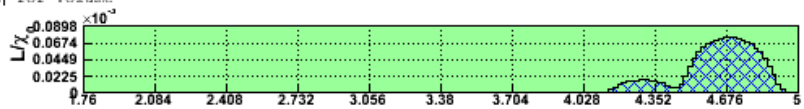



Material budget vs η for volume FER1

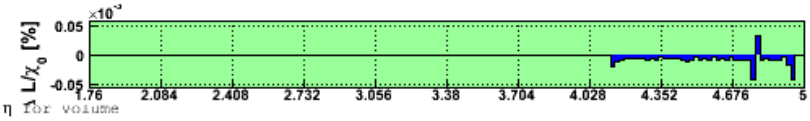



Radiation length differential vs η for volume

FES1

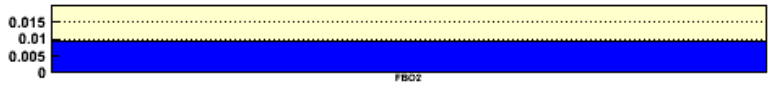



Material budget vs η for volume FES1




Radiation length differential vs η for volume

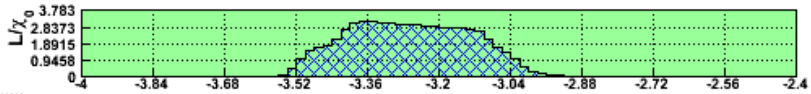
SUMMARY



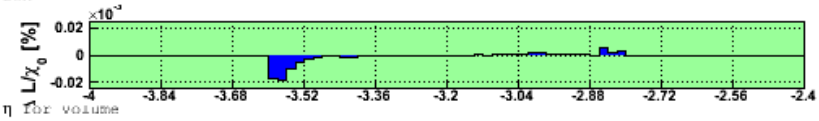

Summary of volumes above 0.5 * threshold

# 43 Validation Summary: Detector FBOX in Geometry y2011

FBOX

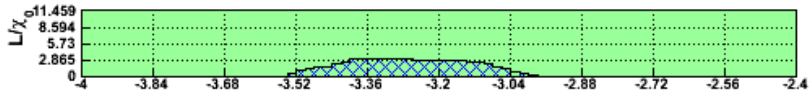



Material budget vs η for volume FBOX

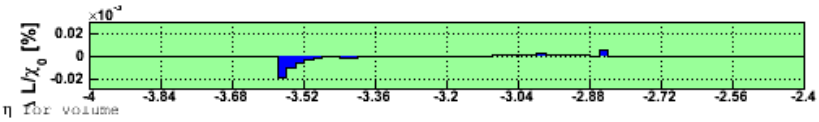



Radiation length differential vs η for volume

FTOW

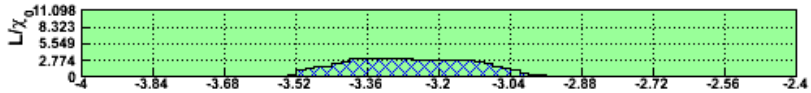



Material budget vs η for volume FTOW

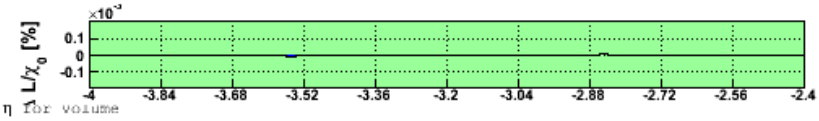



Radiation length differential vs η for volume

FWAL

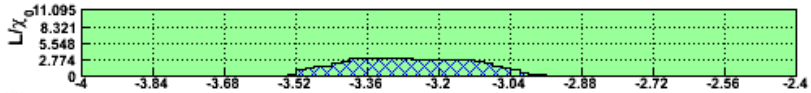



Material budget vs η for volume FWAL

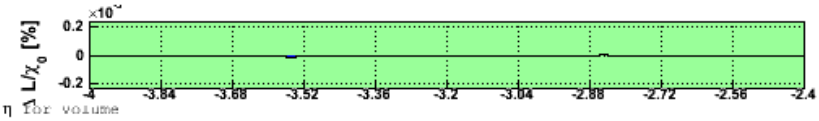



Radiation length differential vs η for volume

FLGR

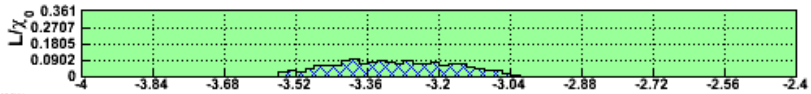



Material budget vs η for volume FLGR

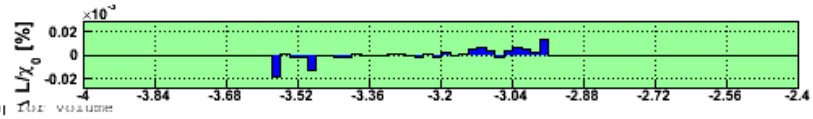



Radiation length differential vs η for volume

FUMT

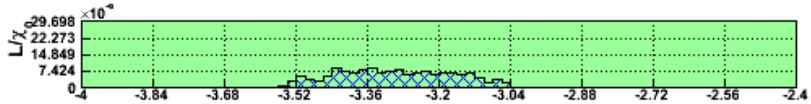



Material budget vs η for volume FUMT

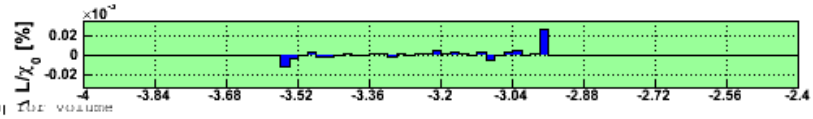



Radiation length differential vs η for volume

FPCT



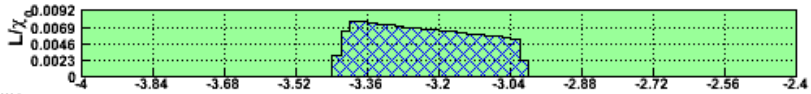

Material budget vs η for volume FPCT



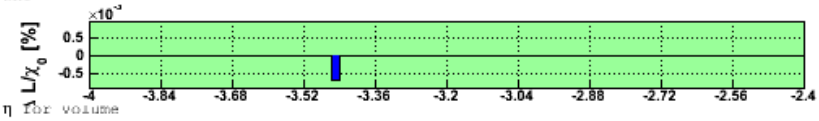

Radiation length differential vs η for volume

# 44 Validation Summary: Detector FBOX in Geometry y2011

FSH1

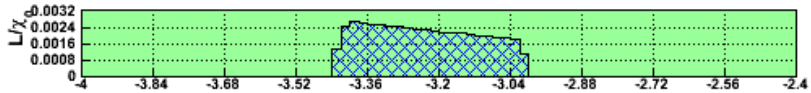



Material budget vs η for volume FSH1

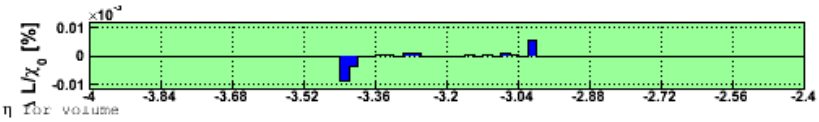



Radiation length differential vs η for volume

FXGT

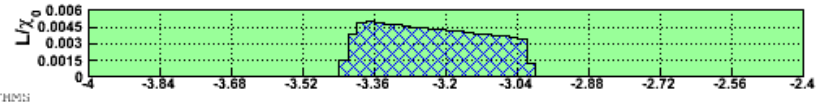



Material budget vs η for volume FXGT

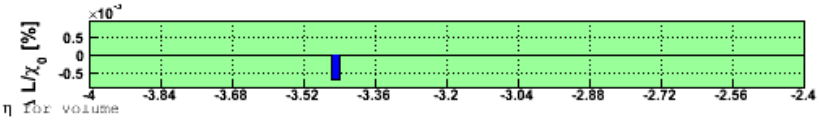



Radiation length differential vs η for volume

FHMS

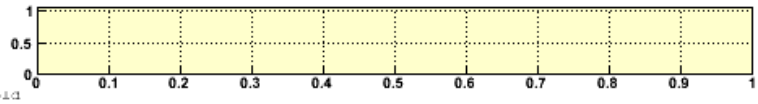



Material budget vs η for volume FHMS




Radiation length differential vs η for volume

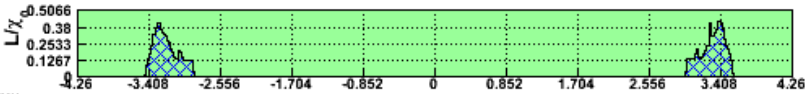
SUMMARY



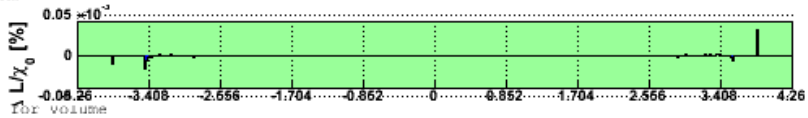

Summary of volumes above 0.5 * threshold

# 45 Validation Summary: Detector FTMO in Geometry y2011

FTMO

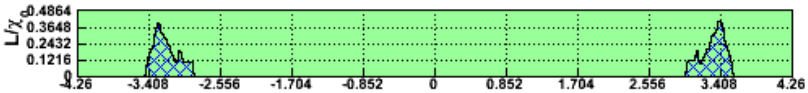



Material budget vs η for volume FTMO

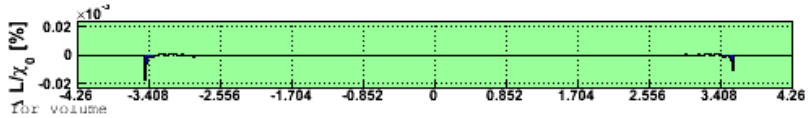



Radiation length differential vs η for volume

FTCM

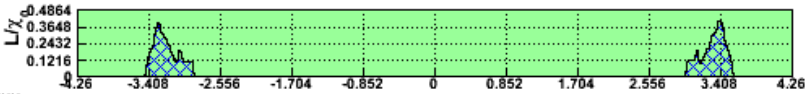



Material budget vs η for volume FTCM

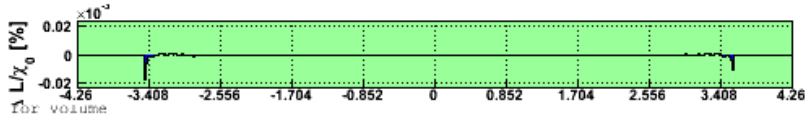



Radiation length differential vs η for volume

FTCD

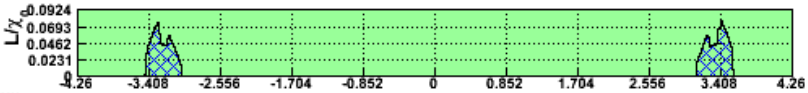



Material budget vs η for volume FTCD

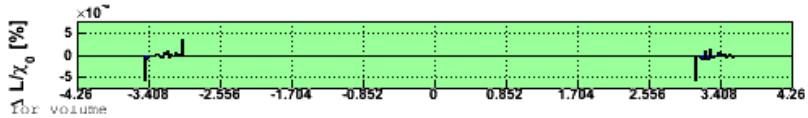



Radiation length differential vs η for volume

FSMO

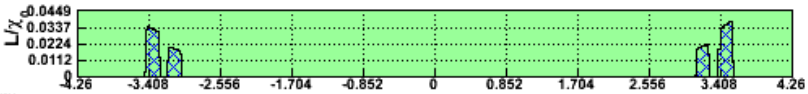



Material budget vs η for volume FSMO

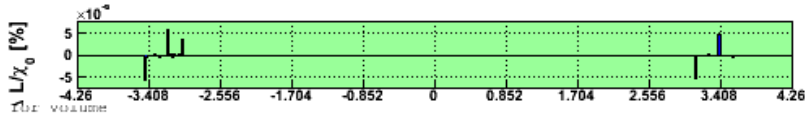



Radiation length differential vs η for volume

FSTL

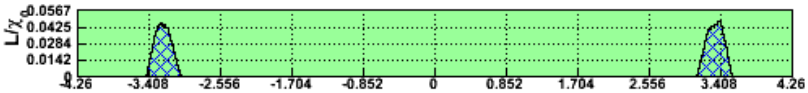



Material budget vs η for volume FSTL

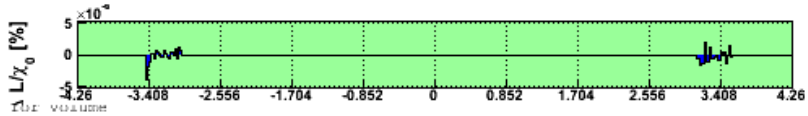



Radiation length differential vs η for volume

FSTC



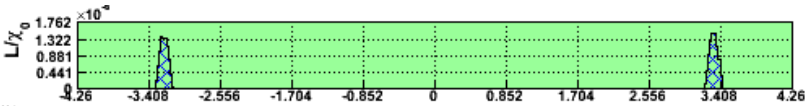

Material budget vs η for volume FSTC



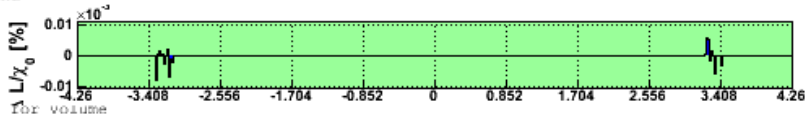

Radiation length differential vs η for volume

# 46 Validation Summary: Detector FTMO in Geometry y2011

FSHL

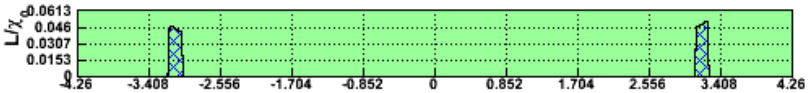



Material budget vs η for volume FSHL

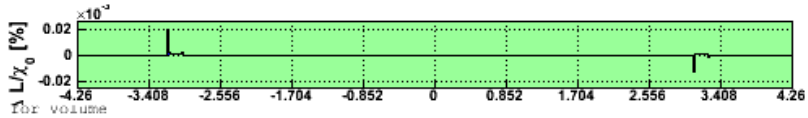



Radiation length differential vs η for volume

FTPL

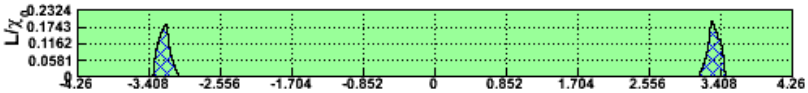



Material budget vs η for volume FTPL

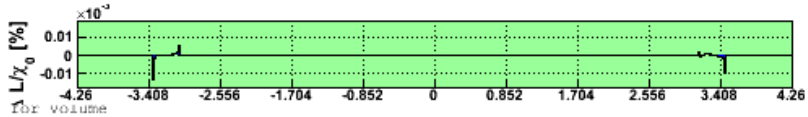



Radiation length differential vs η for volume

FTPO

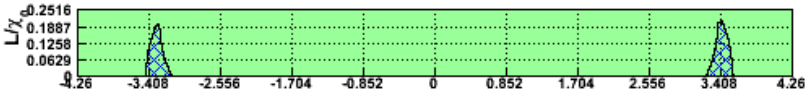



Material budget vs η for volume FTPO

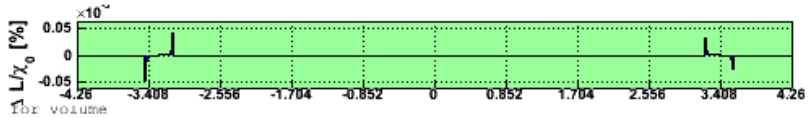



Radiation length differential vs η for volume

FTPI

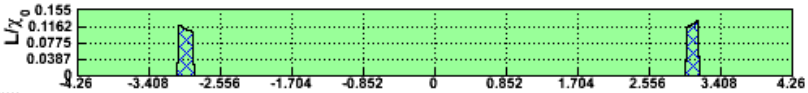



Material budget vs η for volume FTPI

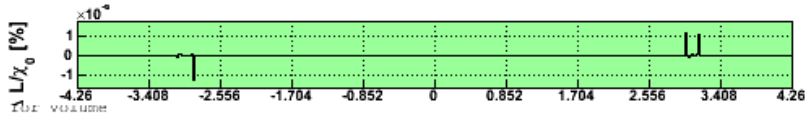



Radiation length differential vs η for volume

FTSH

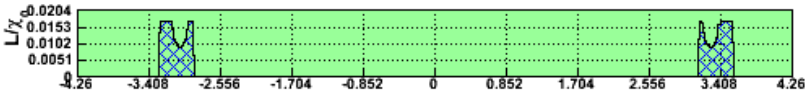



Material budget vs η for volume FTSH

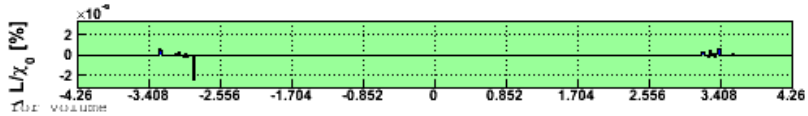



Radiation length differential vs η for volume

FTOF



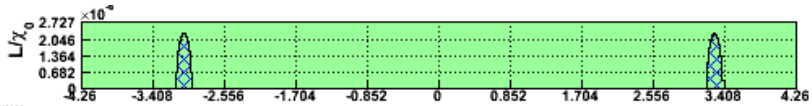

Material budget vs η for volume FTOF



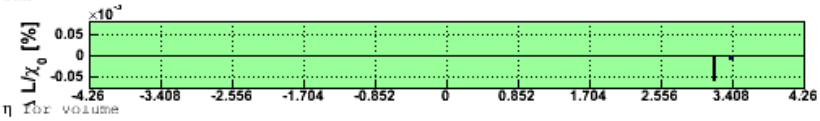

Radiation length differential vs η for volume

# 47 Validation Summary: Detector FTMO in Geometry y2011

FTOH

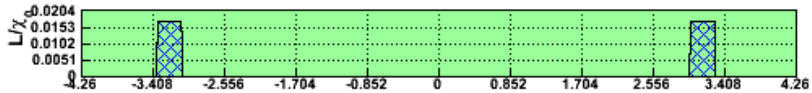



Material budget vs η for volume FTOH

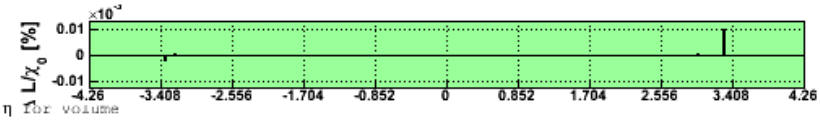



Radiation length differential vs η for volume

FTIF

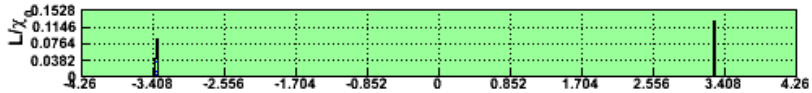



Material budget vs η for volume FTIF

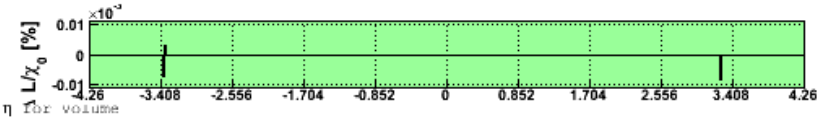



Radiation length differential vs η for volume

FTRM

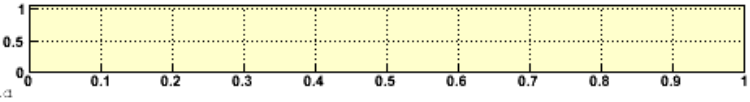



Material budget vs η for volume FTRM




Radiation length differential vs η for volume

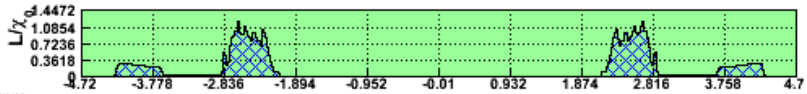
SUMMARY



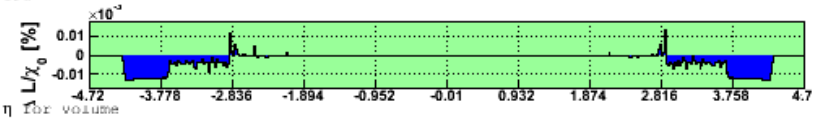

Summary of volumes above 0.5 * threshold

# 48 Validation Summary: Detector FTPC in Geometry y2011

FTPC

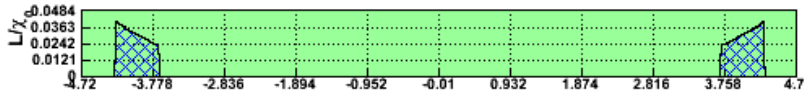



Material budget vs η for volume FTPC

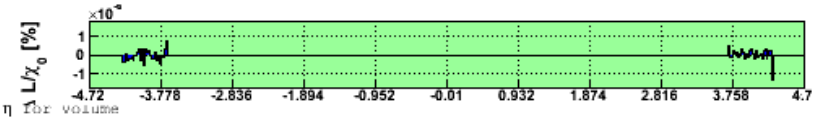



Radiation length differential vs η for volume

FIAL

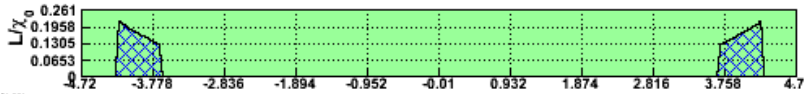



Material budget vs η for volume FIAL

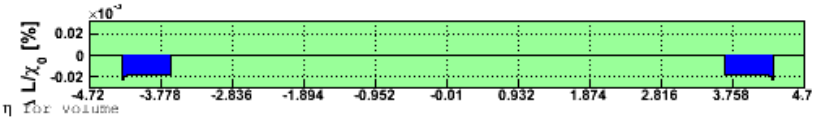



Radiation length differential vs η for volume

FMPT

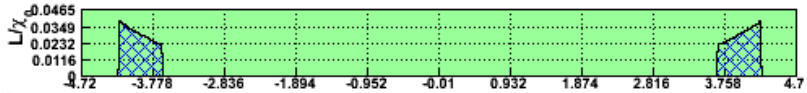



Material budget vs η for volume FMPT

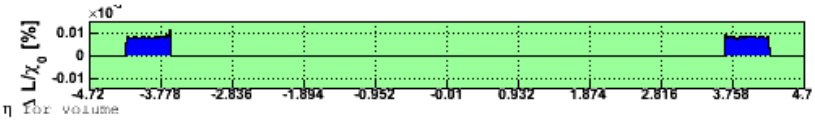



Radiation length differential vs η for volume

FOAL

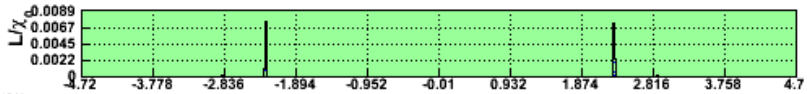



Material budget vs η for volume FOAL

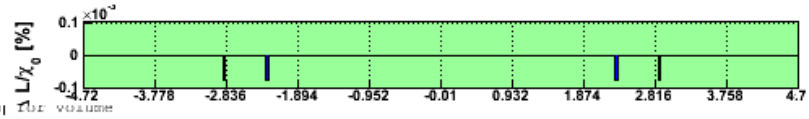



Radiation length differential vs η for volume

FPAD

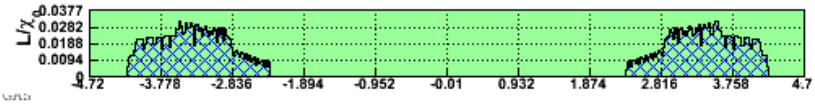



Material budget vs η for volume FPAD

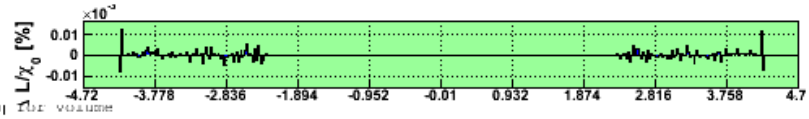



Radiation length differential vs η for volume

FGAS



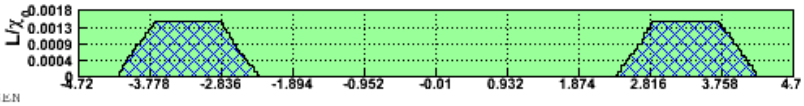

Material budget vs η for volume FGAS



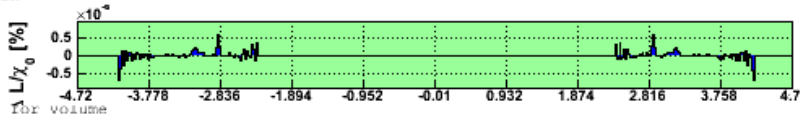

Radiation length differential vs η for volume

# 49 Validation Summary: Detector FTPC in Geometry y2011

FSEN

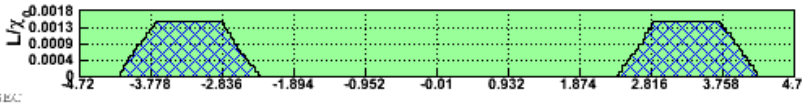



Material budget vs η for volume FSEN

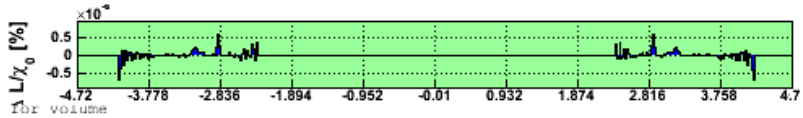



Radiation length differential vs η for volume

FSEC

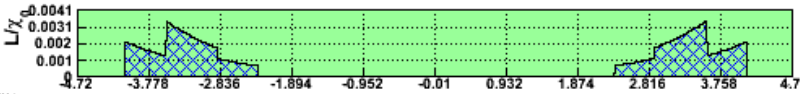



Material budget vs η for volume FSEC

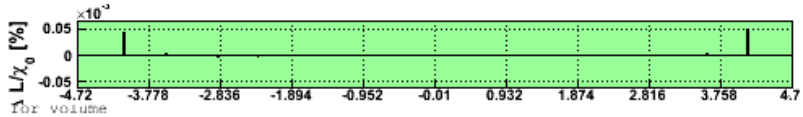



Radiation length differential vs η for volume

FFSL

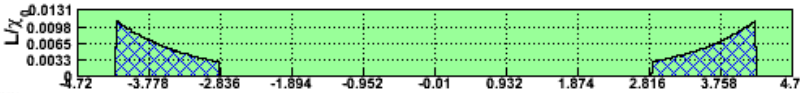



Material budget vs η for volume FFSL

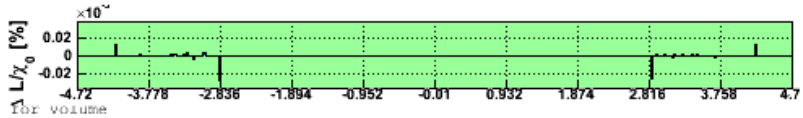



Radiation length differential vs η for volume

FFCE

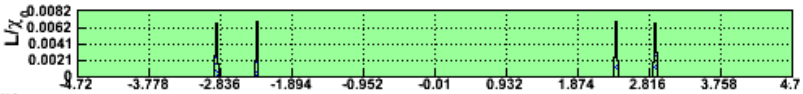



Material budget vs η for volume FFCE

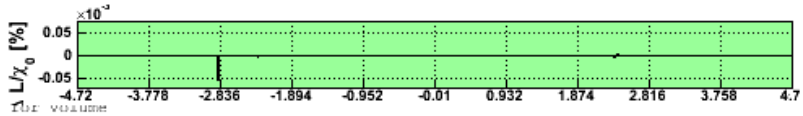



Radiation length differential vs η for volume

FFRA

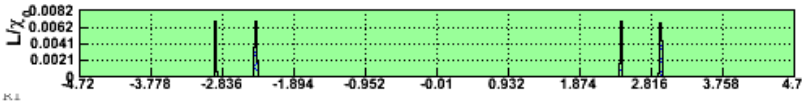



Material budget vs η for volume FFRA

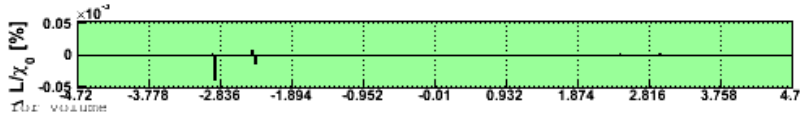



Radiation length differential vs η for volume

FFR1



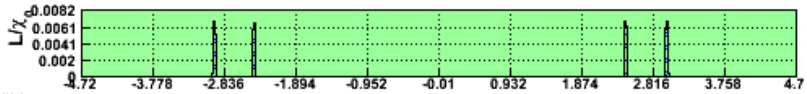

Material budget vs η for volume FFR1



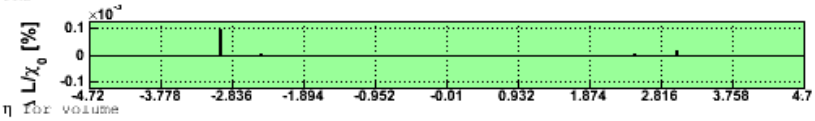

Radiation length differential vs η for volume

# 50 Validation Summary: Detector FTPC in Geometry y2011

FFR2

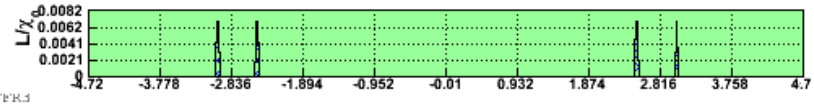



Material budget vs η for volume FFR2

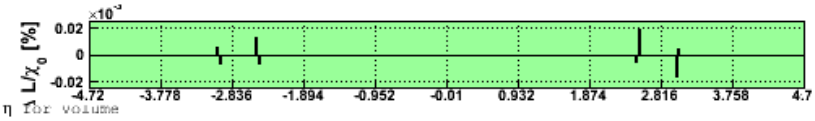



Radiation length differential vs η for volume

FFR3

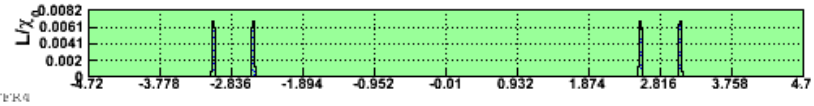



Material budget vs η for volume FFR3

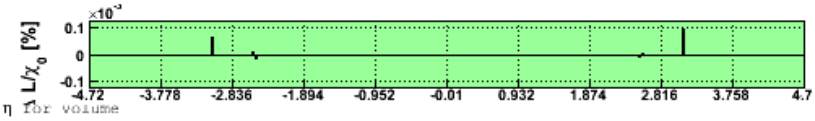



Radiation length differential vs η for volume

FFR4

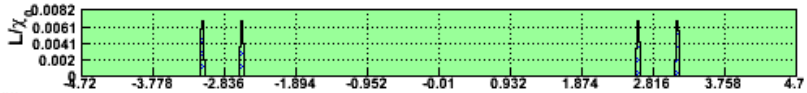



Material budget vs η for volume FFR4

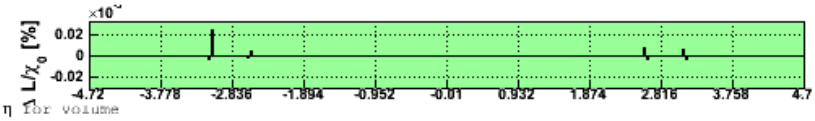



Radiation length differential vs η for volume

FFR5

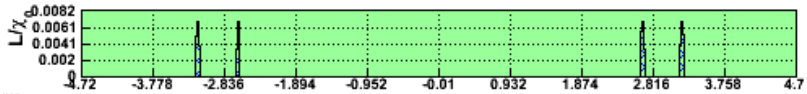



Material budget vs η for volume FFR5

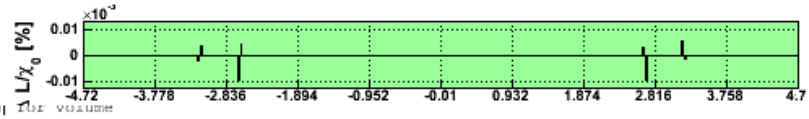



Radiation length differential vs η for volume

FFR6

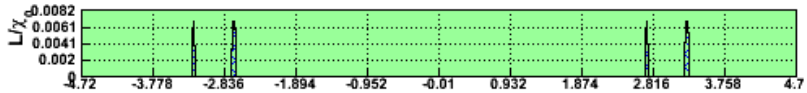



Material budget vs η for volume FFR6

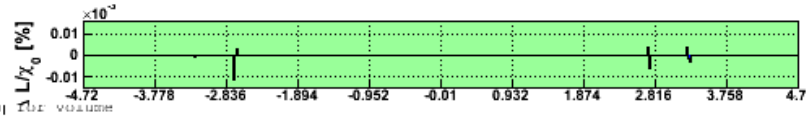



Radiation length differential vs η for volume

FFR7



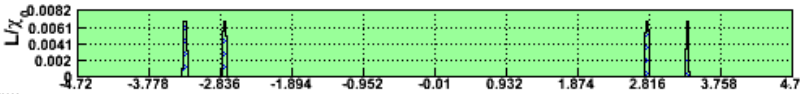

Material budget vs η for volume FFR7



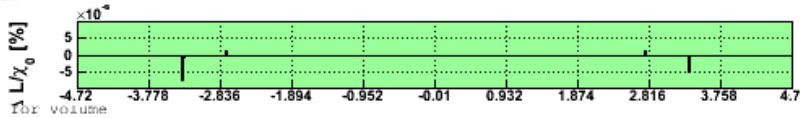

Radiation length differential vs η for volume

# 51 Validation Summary: Detector FTPC in Geometry y2011

FFR8

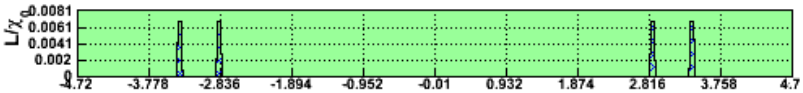



Material budget vs η for volume FFR8

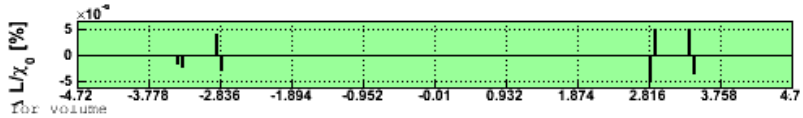



Radiation length differential vs η for volume

FFR9

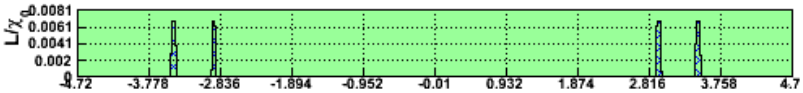



Material budget vs η for volume FFR9

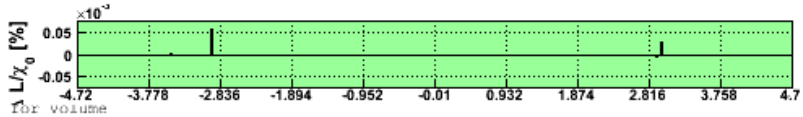



Radiation length differential vs η for volume

FFR0

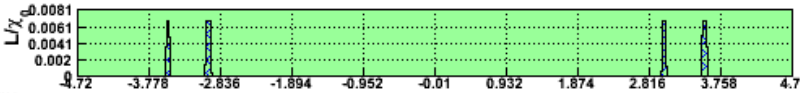



Material budget vs η for volume FFR0

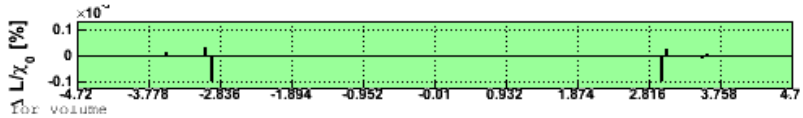



Radiation length differential vs η for volume

FFRa

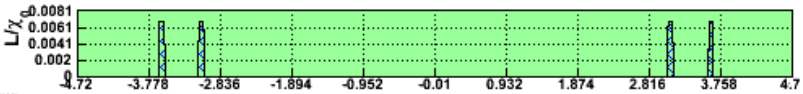



Material budget vs η for volume FFRa

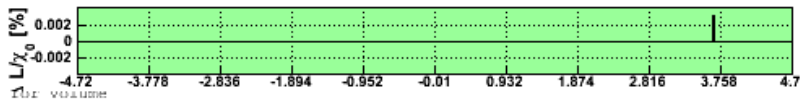



Radiation length differential vs η for volume

FFRb

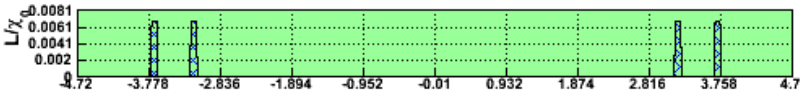



Material budget vs η for volume FFRb

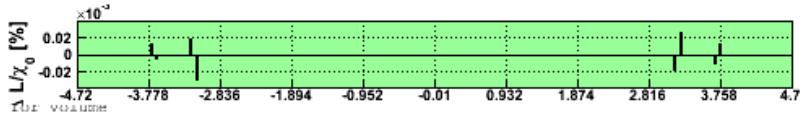



Radiation length differential vs η for volume

FFRc



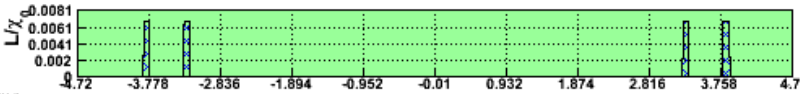

Material budget vs η for volume FFRc



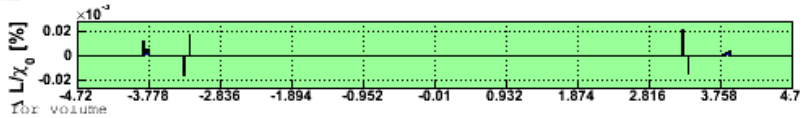

Radiation length differential vs η for volume

# 52 Validation Summary: Detector FTPC in Geometry y2011

FFRd

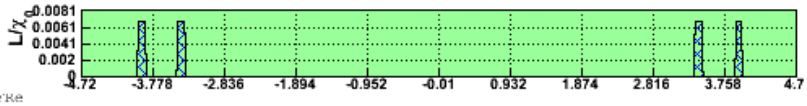



Material budget vs η for volume FFRd

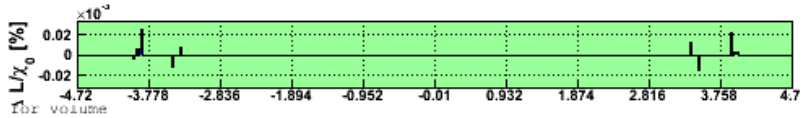



Radiation length differential vs η for volume

FFRe

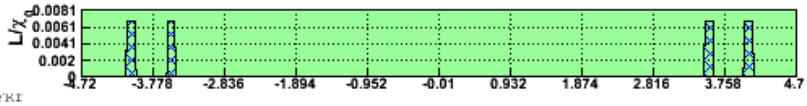



Material budget vs η for volume FFRe

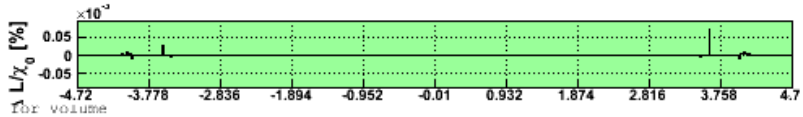



Radiation length differential vs η for volume

FFRf

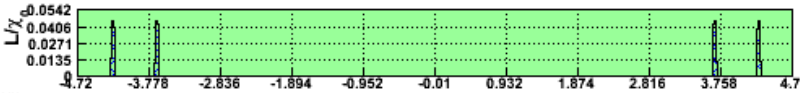



Material budget vs η for volume FFRf

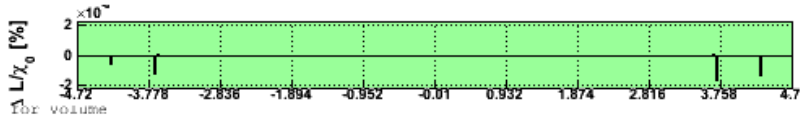



Radiation length differential vs η for volume

FIFR

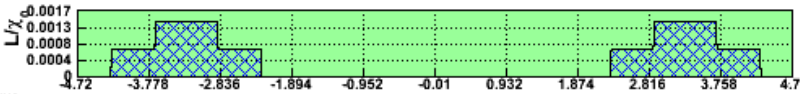



Material budget vs η for volume FIFR

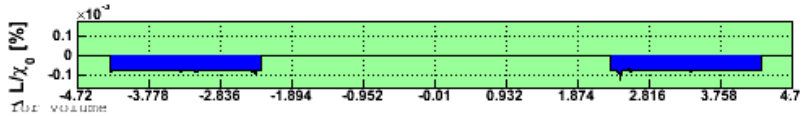



Radiation length differential vs η for volume

FKWI

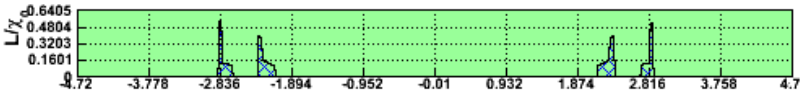



Material budget vs η for volume FKWI

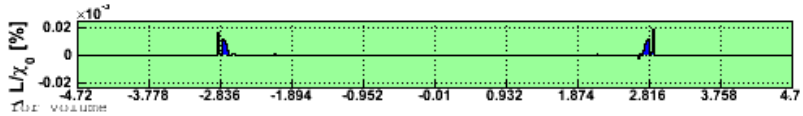



Radiation length differential vs η for volume

FSER



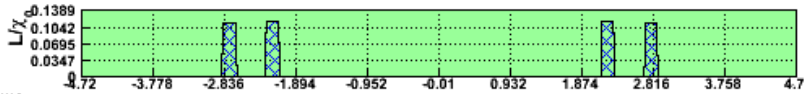

Material budget vs η for volume FSER



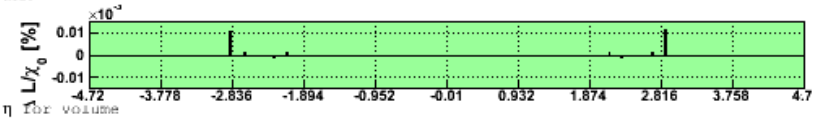

Radiation length differential vs η for volume

# 53 Validation Summary: Detector FTPC in Geometry y2011

FSRA

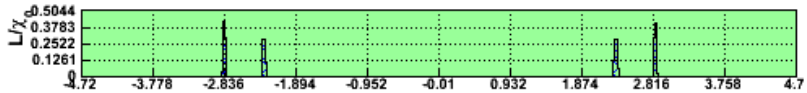



Material budget vs η for volume FSRA

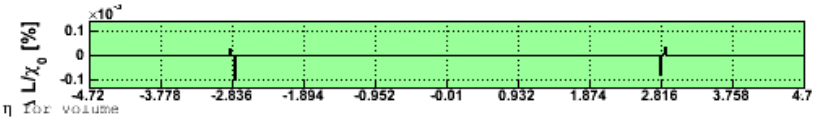



Radiation length differential vs η for volume

FSRB

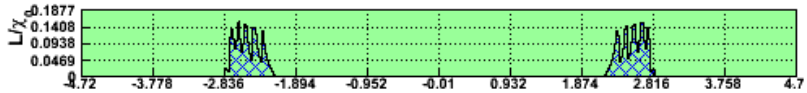



Material budget vs η for volume FSRB

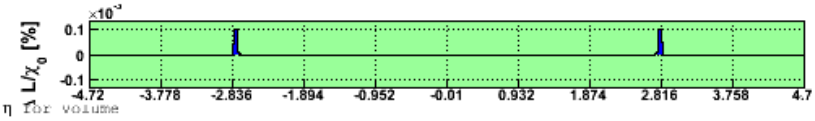



Radiation length differential vs η for volume

FSPG

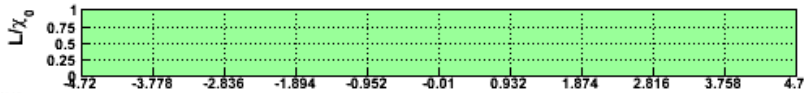



Material budget vs η for volume FSPG

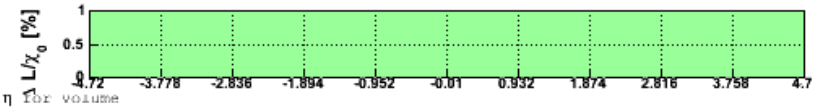



Radiation length differential vs η for volume

FSPI

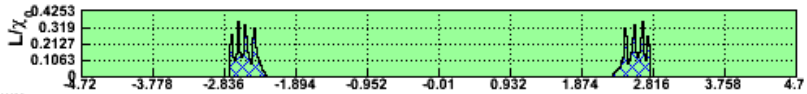



Material budget vs η for volume FSPI

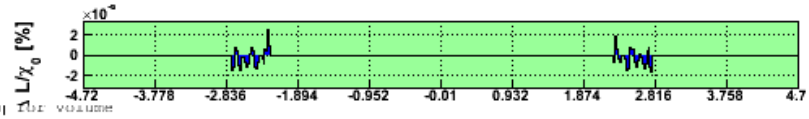



Radiation length differential vs η for volume

FSSM

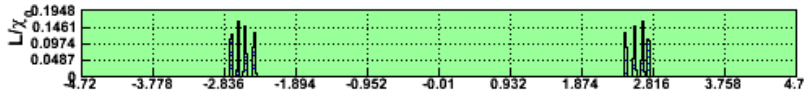



Material budget vs η for volume FSSM

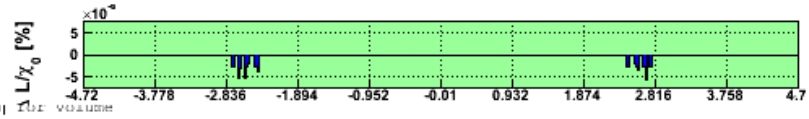



Radiation length differential vs η for volume

FSRI



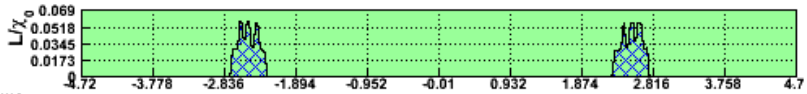

Material budget vs η for volume FSRI



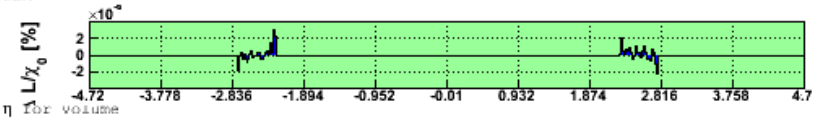

Radiation length differential vs η for volume

# 54 Validation Summary: Detector FTPC in Geometry y2011

FSBA

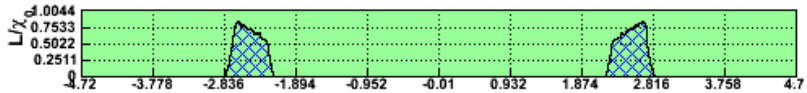



Material budget vs η for volume FSBA

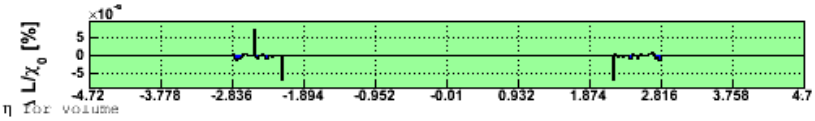



Radiation length differential vs η for volume

FROS

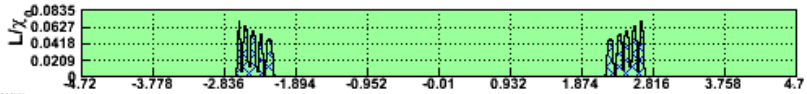



Material budget vs η for volume FROS

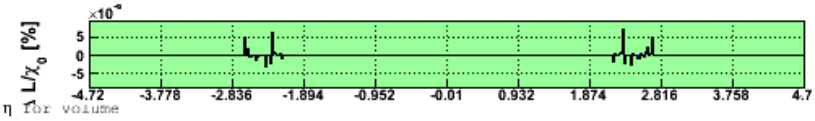



Radiation length differential vs η for volume

FROT

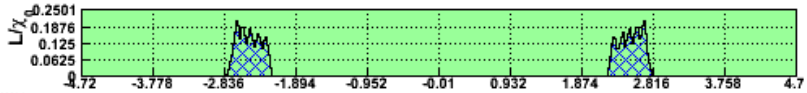



Material budget vs η for volume FROT

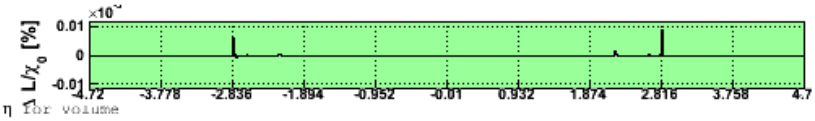



Radiation length differential vs η for volume

FROP

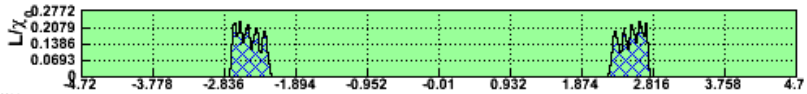



Material budget vs η for volume FROP

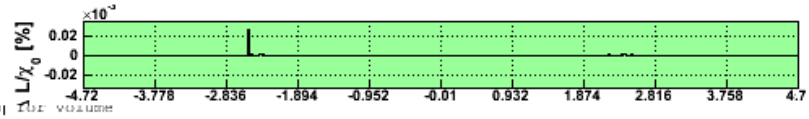



Radiation length differential vs η for volume

FREL

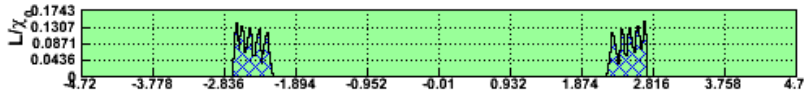



Material budget vs η for volume FREL

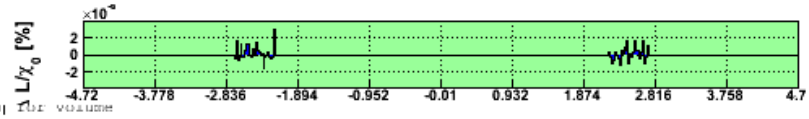



Radiation length differential vs η for volume

FRCC

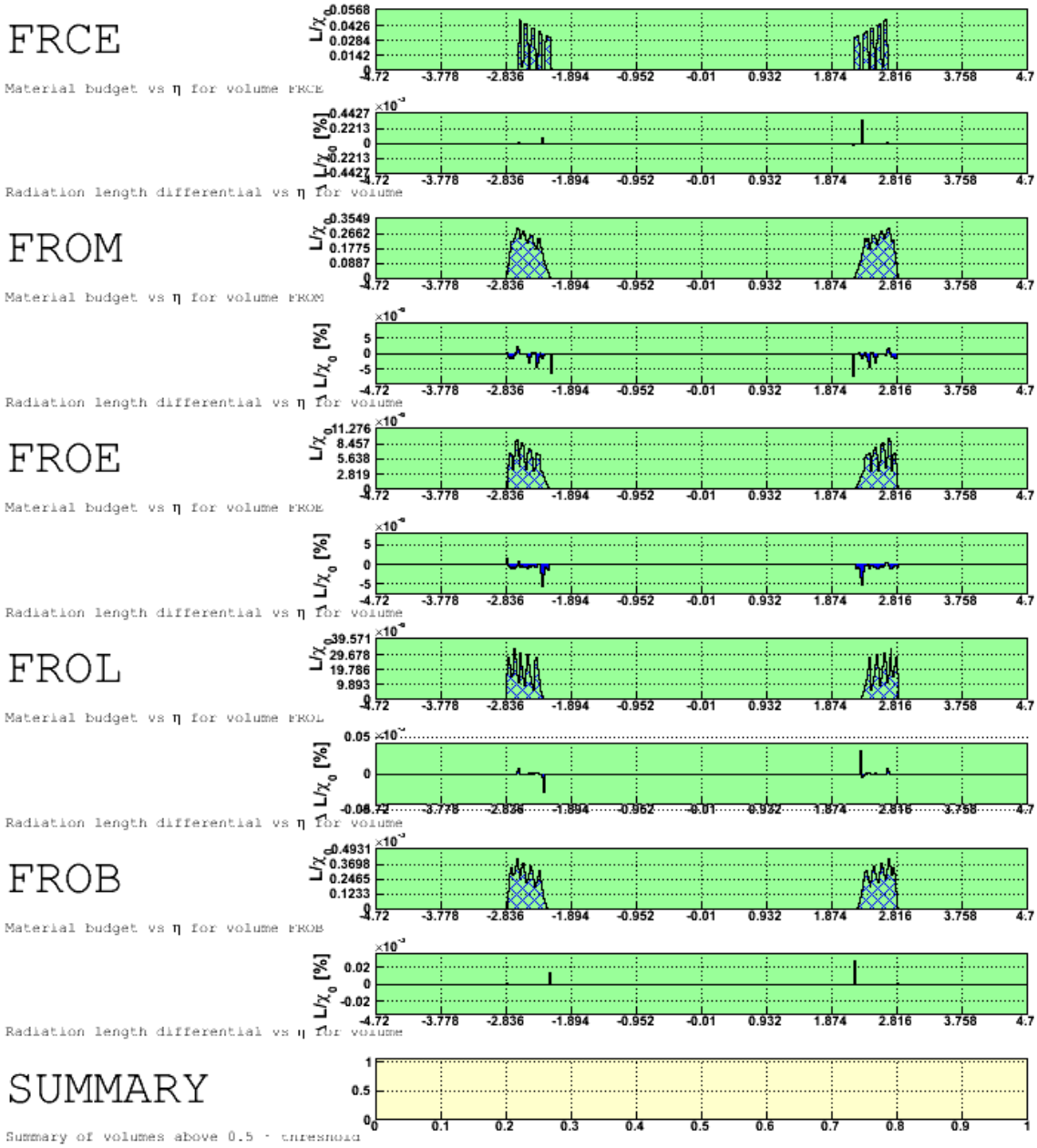



Material budget vs η for volume FRCC



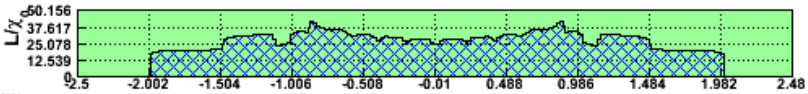

Radiation length differential vs η for volume

# 55 Validation Summary: Detector FTPC in Geometry y2011

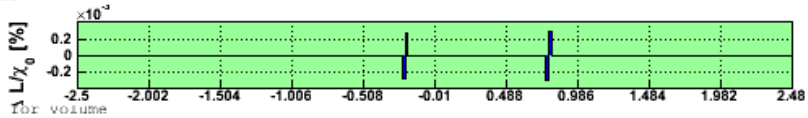


# 56 Validation Summary: Detector MAGP in Geometry y2011

MAGP

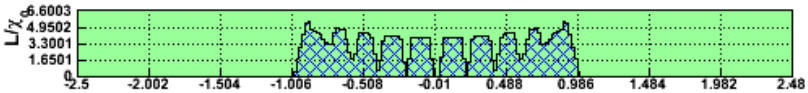



Material budget vs η for volume MAGP

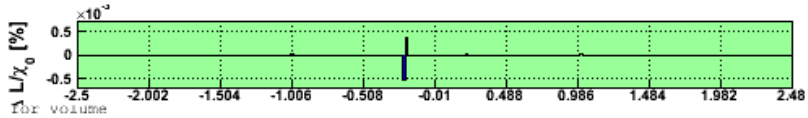



Radiation length differential vs η for volume

COIL

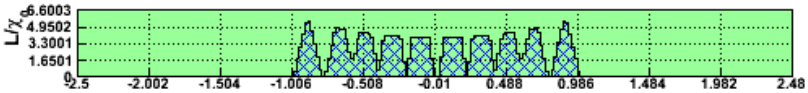



Material budget vs η for volume COIL

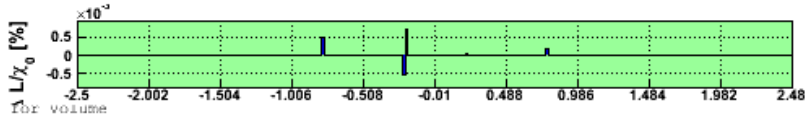



Radiation length differential vs η for volume

MCSE

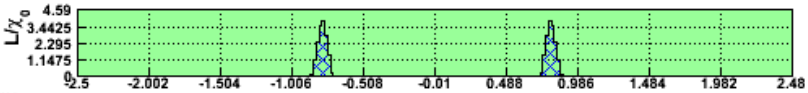



Material budget vs η for volume MCSE

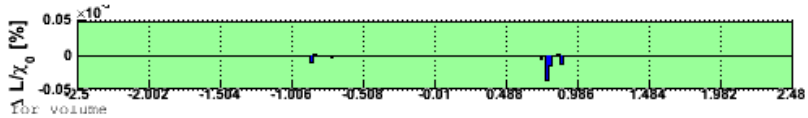



Radiation length differential vs η for volume

MCS1

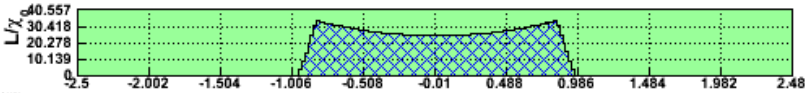



Material budget vs η for volume MCS1

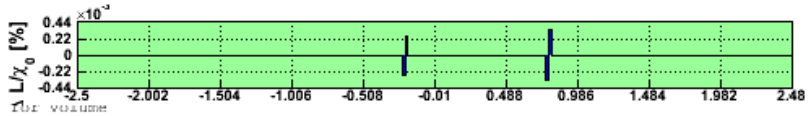



Radiation length differential vs η for volume

MRET

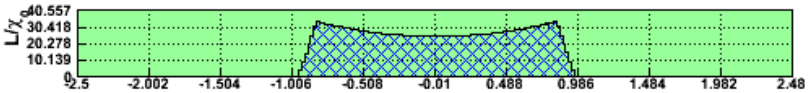



Material budget vs η for volume MRET

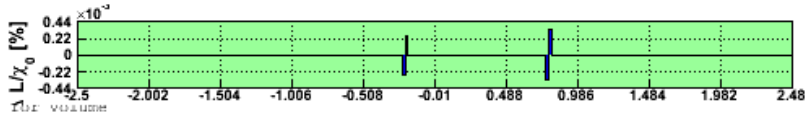



Radiation length differential vs η for volume

MSEC



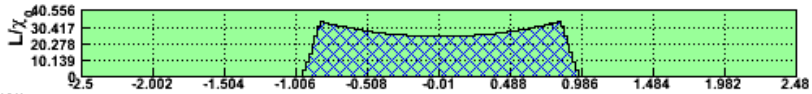

Material budget vs η for volume MSEC



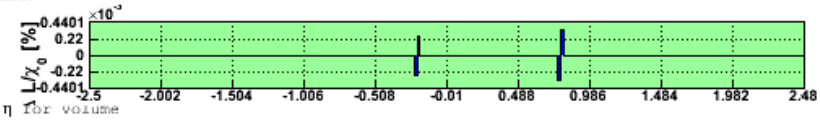

Radiation length differential vs η for volume

# 57 Validation Summary: Detector MAGP in Geometry y2011

MBAR

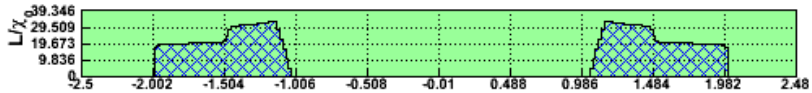



Material budget vs η for volume MBAR

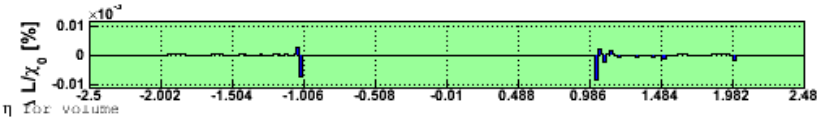



Radiation length differential vs η for volume

MPTV

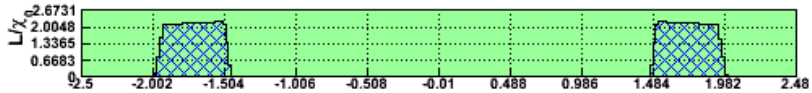



Material budget vs η for volume MPTV

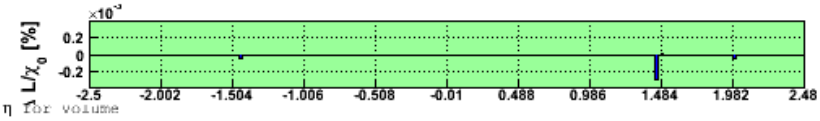



Radiation length differential vs η for volume

MPCV

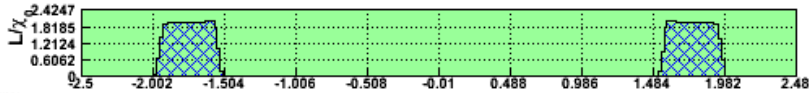



Material budget vs η for volume MPCV

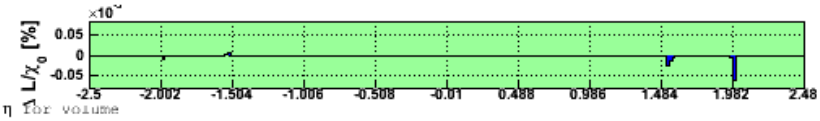



Radiation length differential vs η for volume

MTCL

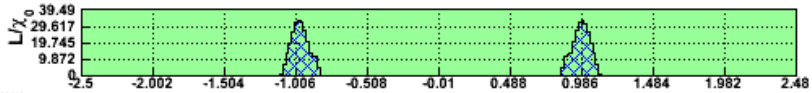



Material budget vs η for volume MTCL

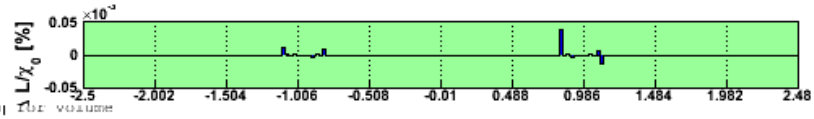



Radiation length differential vs η for volume

MRGV

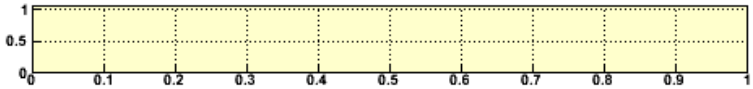



Material budget vs η for volume MRGV




Radiation length differential vs η for volume

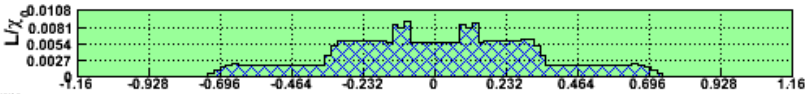
SUMMARY



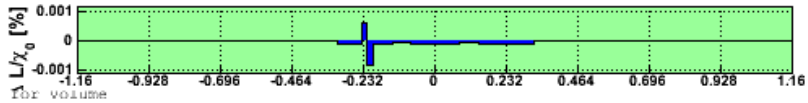

Summary of volumes above 0.5 - threshold

# 58 Validation Summary: Detector MUTD in Geometry y2011

MUTD

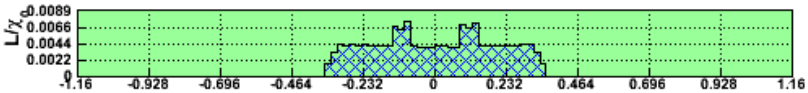



Material budget vs η for volume MUTD

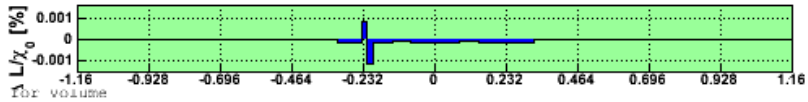



Radiation length differential vs η for volume

MTMF

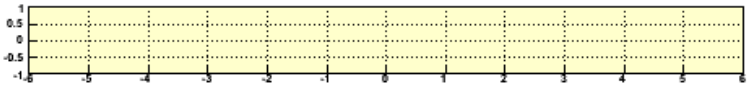



Material budget vs η for volume MTMF

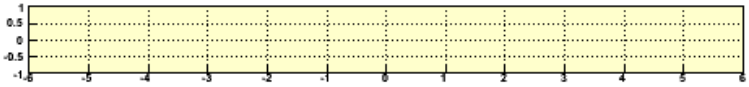



Radiation length differential vs η for volume

MTLB

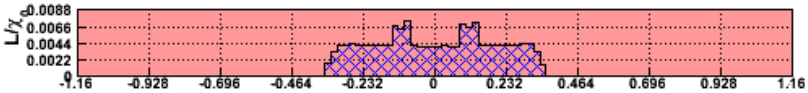



Material budget vs η for volume MTLB

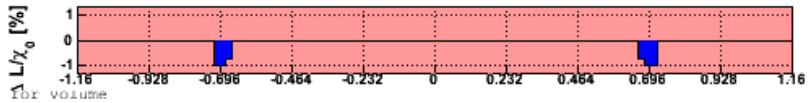



Radiation length differential vs η for volume

MMBL

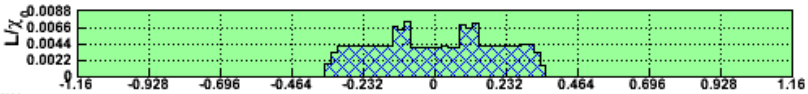



Material budget vs η for volume MMBL

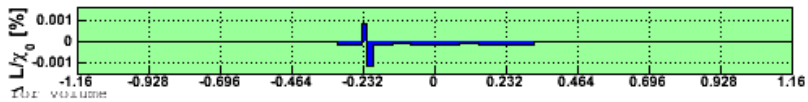



Radiation length differential vs η for volume

MTRF

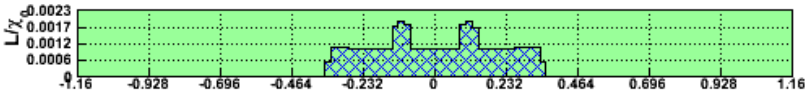



Material budget vs η for volume MTRF

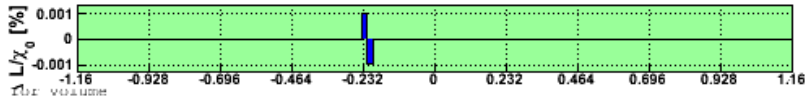



Radiation length differential vs η for volume

MTBP



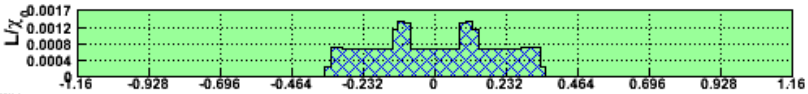

Material budget vs η for volume MTBP



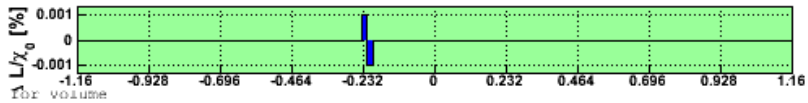

Radiation length differential vs η for volume

# 59 Validation Summary: Detector MUTD in Geometry y2011

MTTP

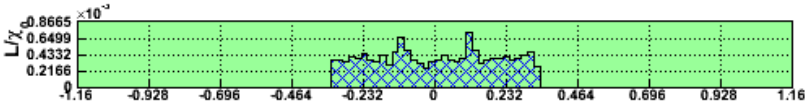



Material budget vs η for volume MTTP

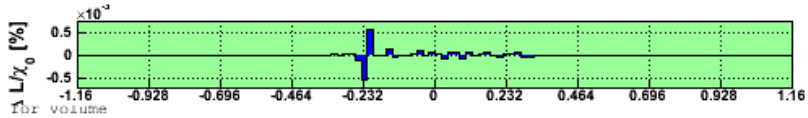



Radiation length differential vs η for volume

MLCH

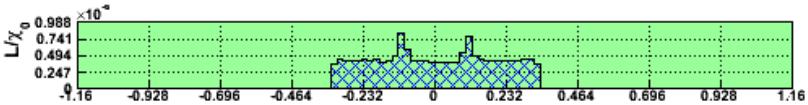



Material budget vs η for volume MLCH

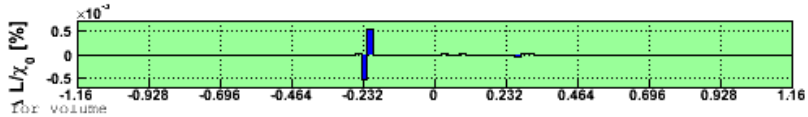



Radiation length differential vs η for volume

MLAI

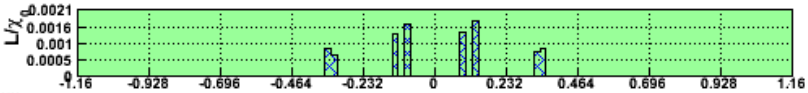



Material budget vs η for volume MLAI

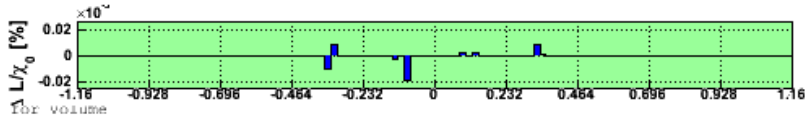



Radiation length differential vs η for volume

MSCH

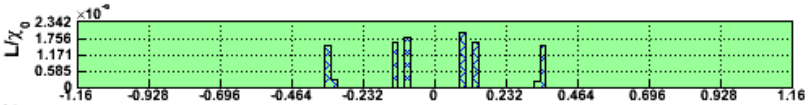



Material budget vs η for volume MSCH

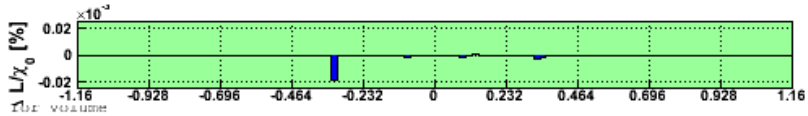



Radiation length differential vs η for volume

MSAI

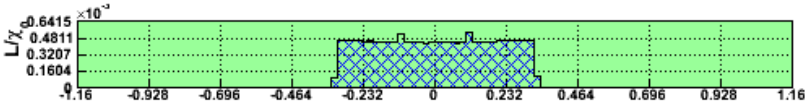



Material budget vs η for volume MSAI

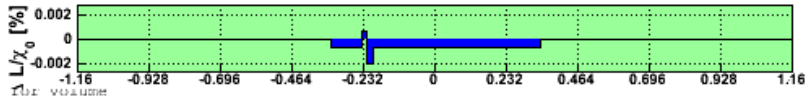



Radiation length differential vs η for volume

MOGL

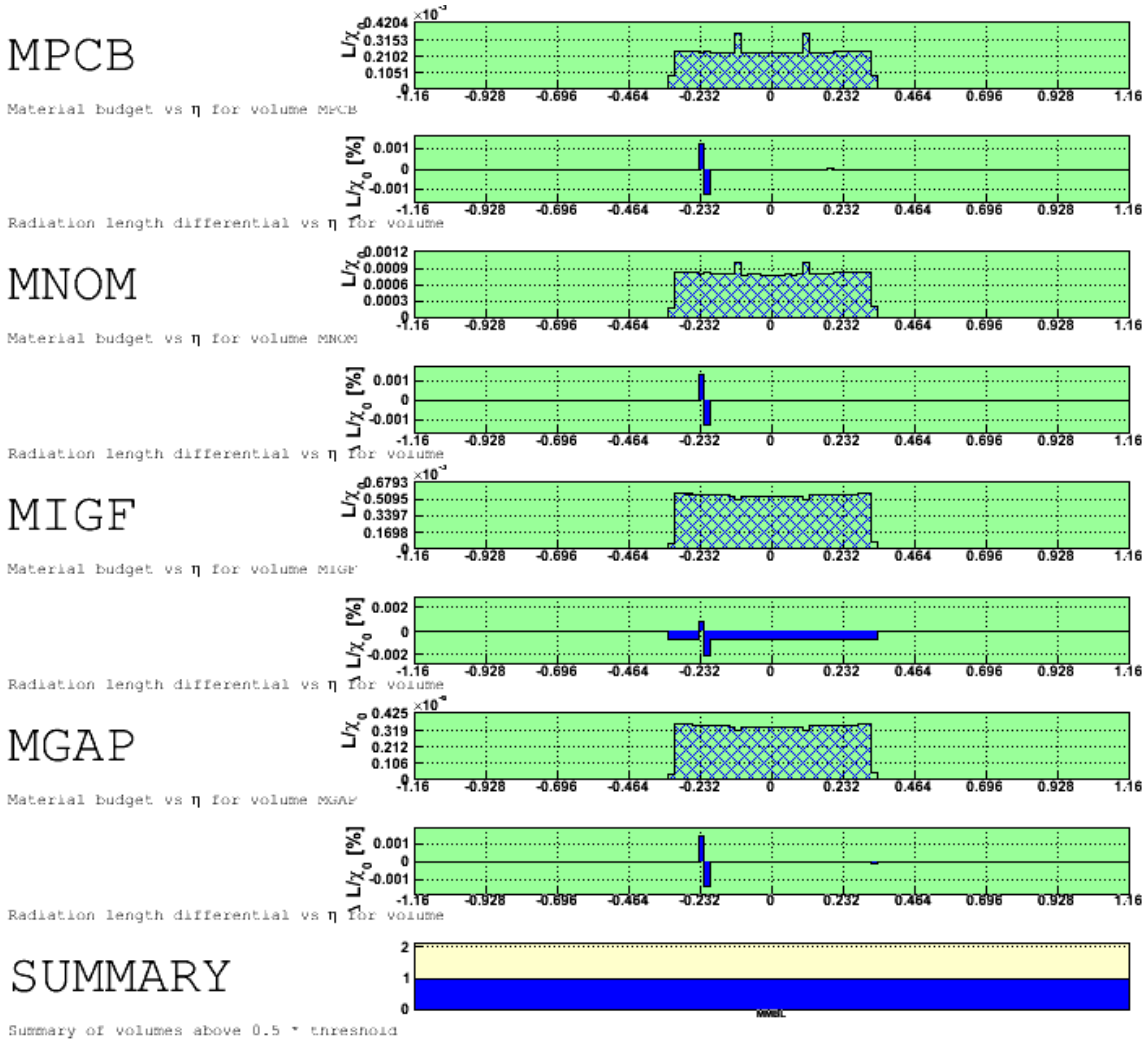



Material budget vs η for volume MOGL



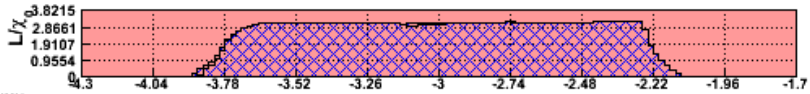

Radiation length differential vs η for volume

# 60 Validation Summary: Detector MUTD in Geometry y2011

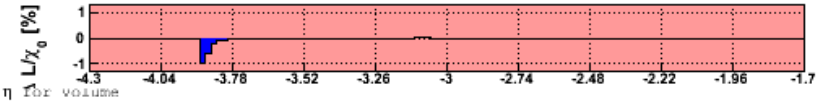


# 61 Validation Summary: Detector PHMD in Geometry y2011

PHMD

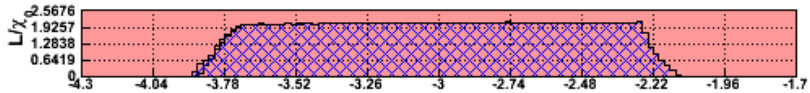



Material budget vs η for volume PHMD

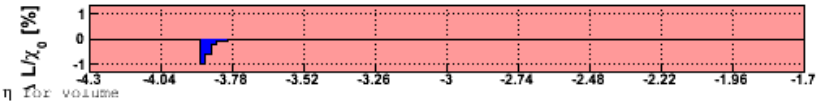



Radiation length differential vs η for volume

PHMS

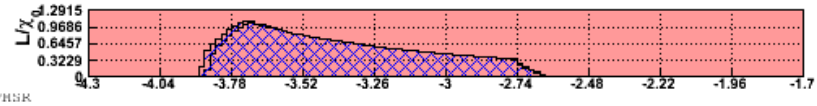



Material budget vs η for volume PHMS

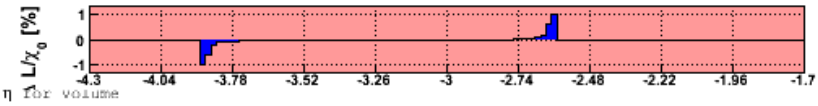



Radiation length differential vs η for volume

PHSR

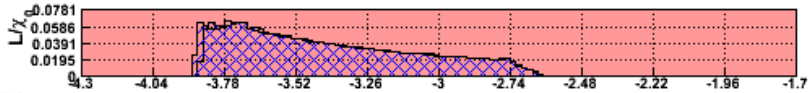



Material budget vs η for volume PHSR

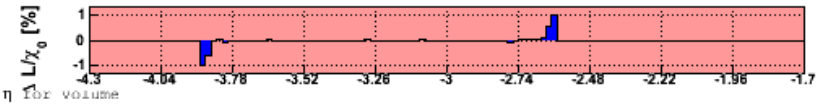



Radiation length differential vs η for volume

PMDA

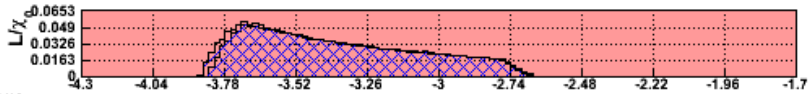



Material budget vs η for volume PMDA

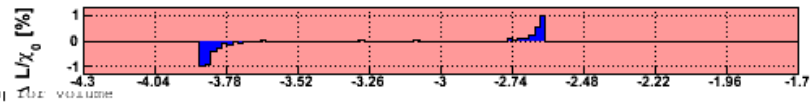



Radiation length differential vs η for volume

AIRA

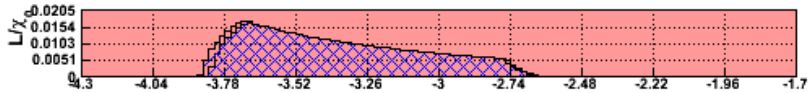



Material budget vs η for volume AIRA

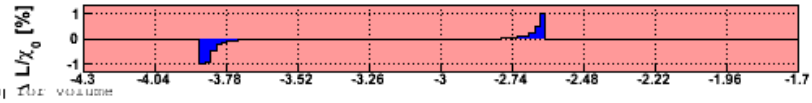



Radiation length differential vs η for volume

PCBA



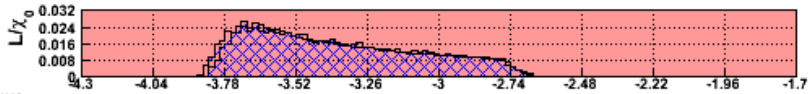

Material budget vs η for volume PCBA



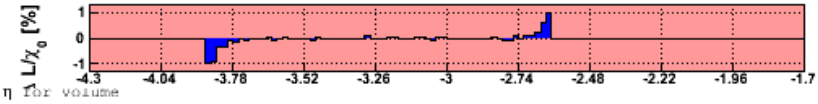

Radiation length differential vs η for volume

# 62 Validation Summary: Detector PHMD in Geometry y2011

PHCA

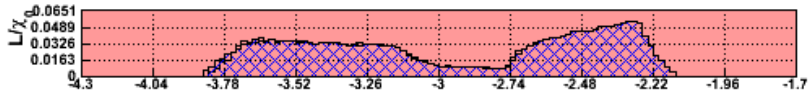



Material budget vs η for volume PHCA

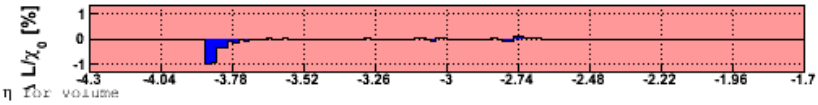



Radiation length differential vs η for volume

ASTR

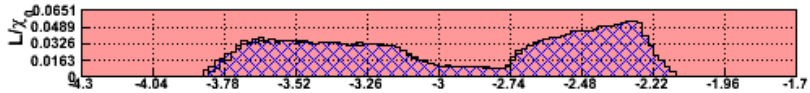



Material budget vs η for volume ASTR

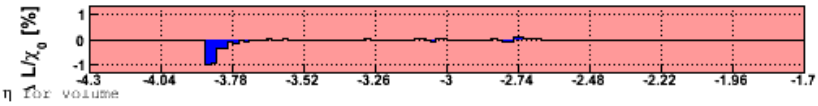



Radiation length differential vs η for volume

PSTR

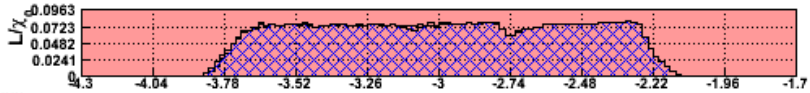



Material budget vs η for volume PSTR

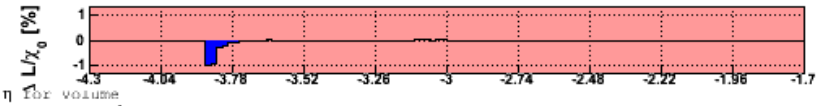



Radiation length differential vs η for volume

PDCU

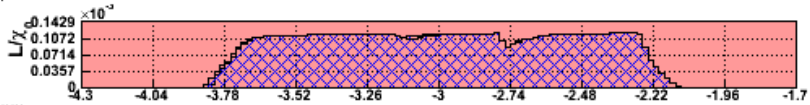



Material budget vs η for volume PDCU

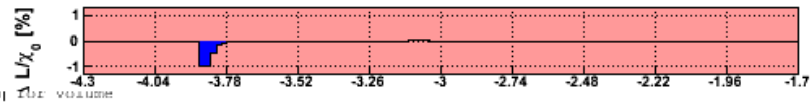



Radiation length differential vs η for volume

PDGS

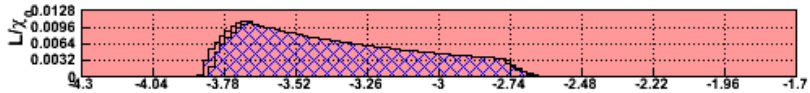



Material budget vs η for volume PDGS

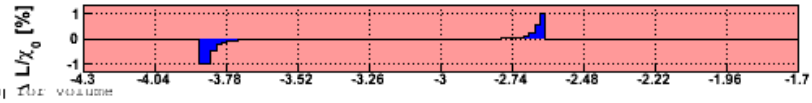



Radiation length differential vs η for volume

BASA



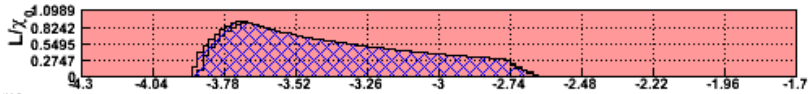

Material budget vs η for volume BASA



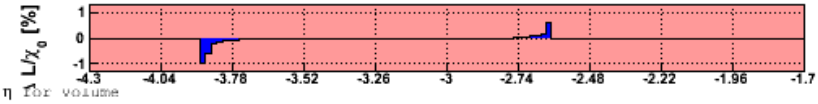

Radiation length differential vs η for volume

# 63 Validation Summary: Detector PHMD in Geometry y2011

PPBA

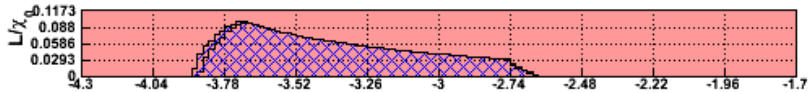



Material budget vs η for volume PPBA

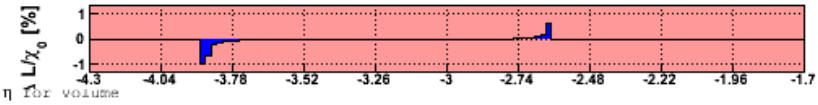



Radiation length differential vs η for volume

PFEA

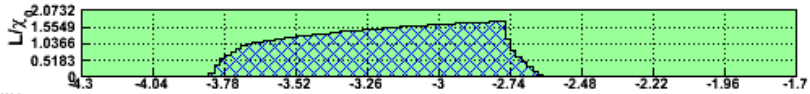



Material budget vs η for volume PFEA

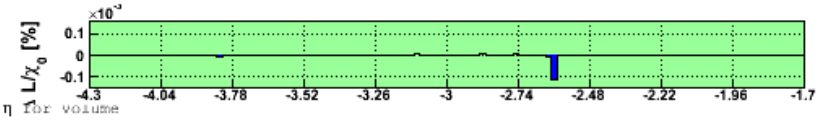



Radiation length differential vs η for volume

PHS1

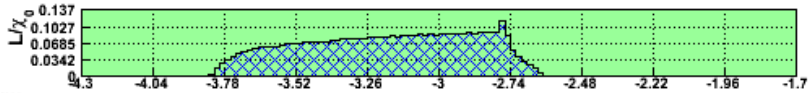



Material budget vs η for volume PHS1

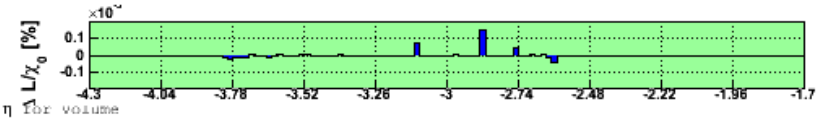



Radiation length differential vs η for volume

PMD1

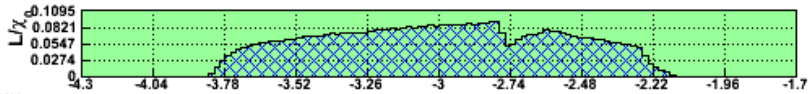



Material budget vs η for volume PMD1

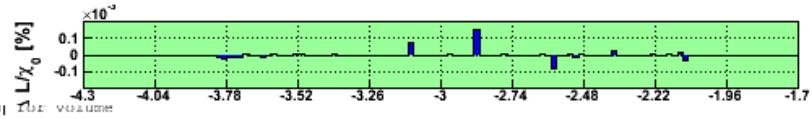



Radiation length differential vs η for volume

AIR1

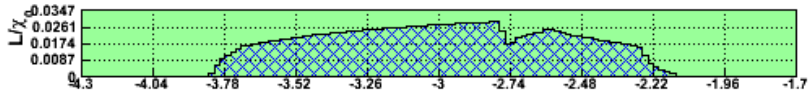



Material budget vs η for volume AIR1

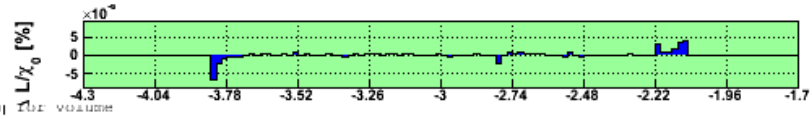



Radiation length differential vs η for volume

PCB1



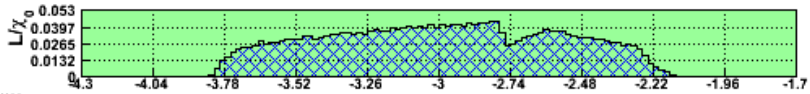

Material budget vs η for volume PCB1



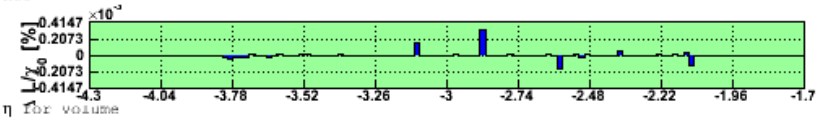

Radiation length differential vs η for volume

# 64 Validation Summary: Detector PHMD in Geometry y2011

PHC1

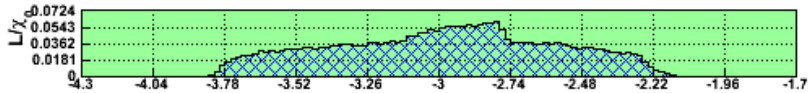



Material budget vs η for volume PHC1

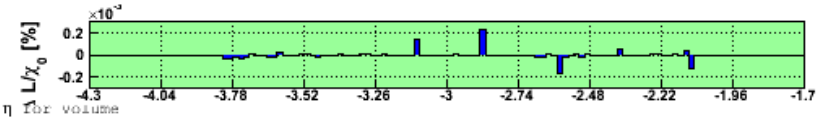



Radiation length differential vs η for volume

AST1

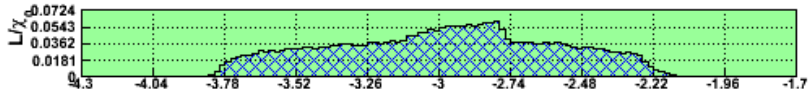



Material budget vs η for volume AST1

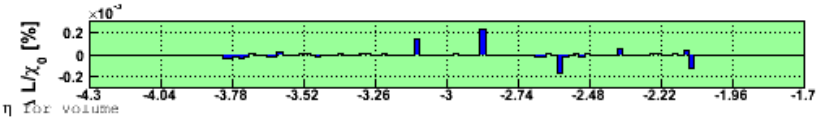



Radiation length differential vs η for volume

PST1

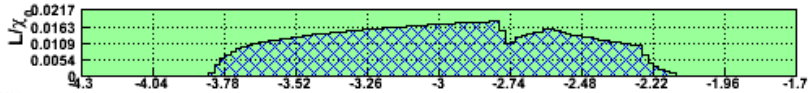



Material budget vs η for volume PST1

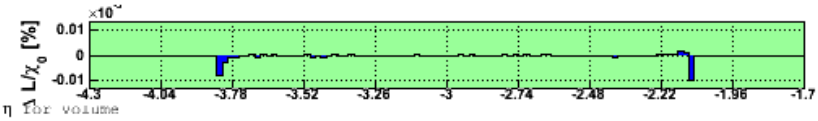



Radiation length differential vs η for volume

BAS1

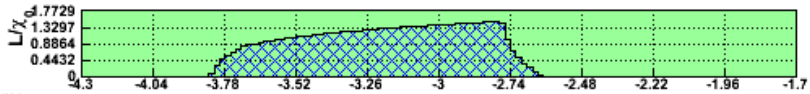



Material budget vs η for volume BAS1

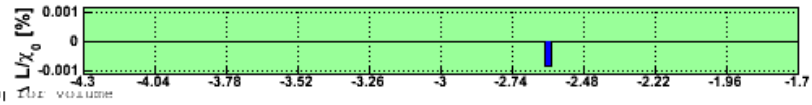



Radiation length differential vs η for volume

PPB1

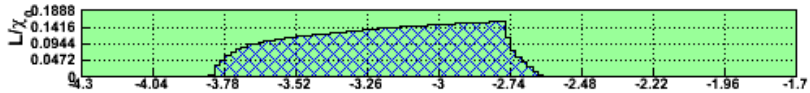



Material budget vs η for volume PPB1

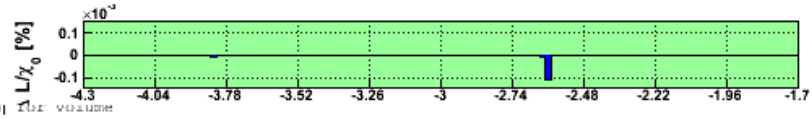



Radiation length differential vs η for volume

PFE1



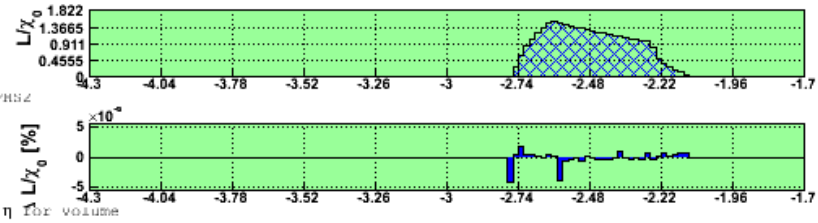

Material budget vs η for volume PFE1



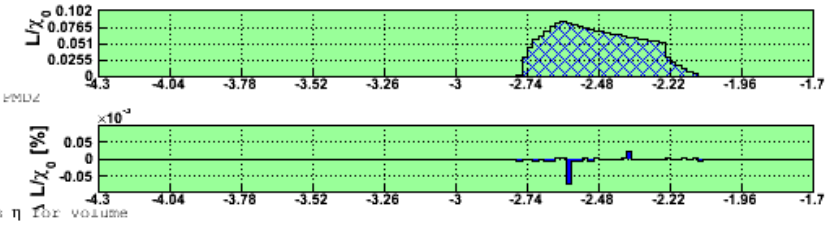

Radiation length differential vs η for volume

# 65 Validation Summary: Detector PHMD in Geometry y2011

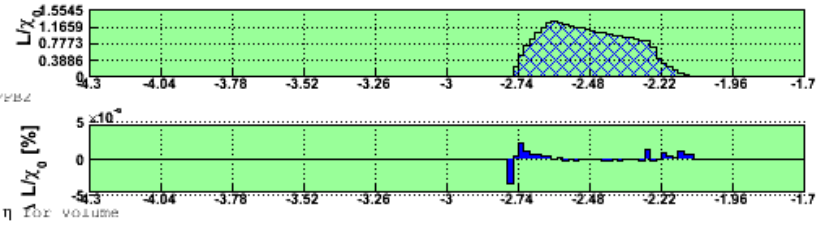
PHS2



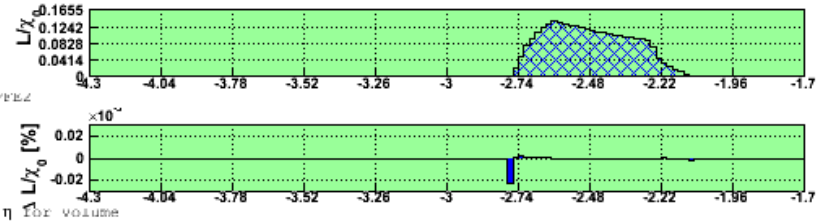

PMD2



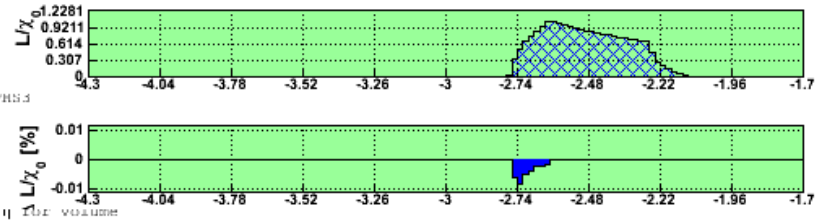

PPB2



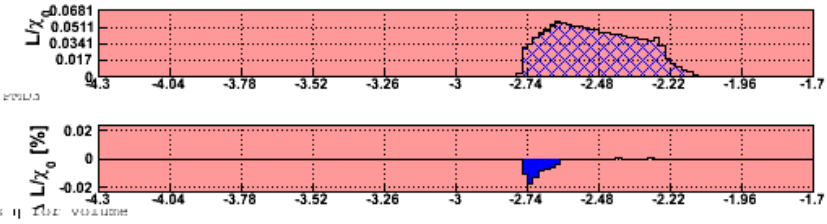

PFE2



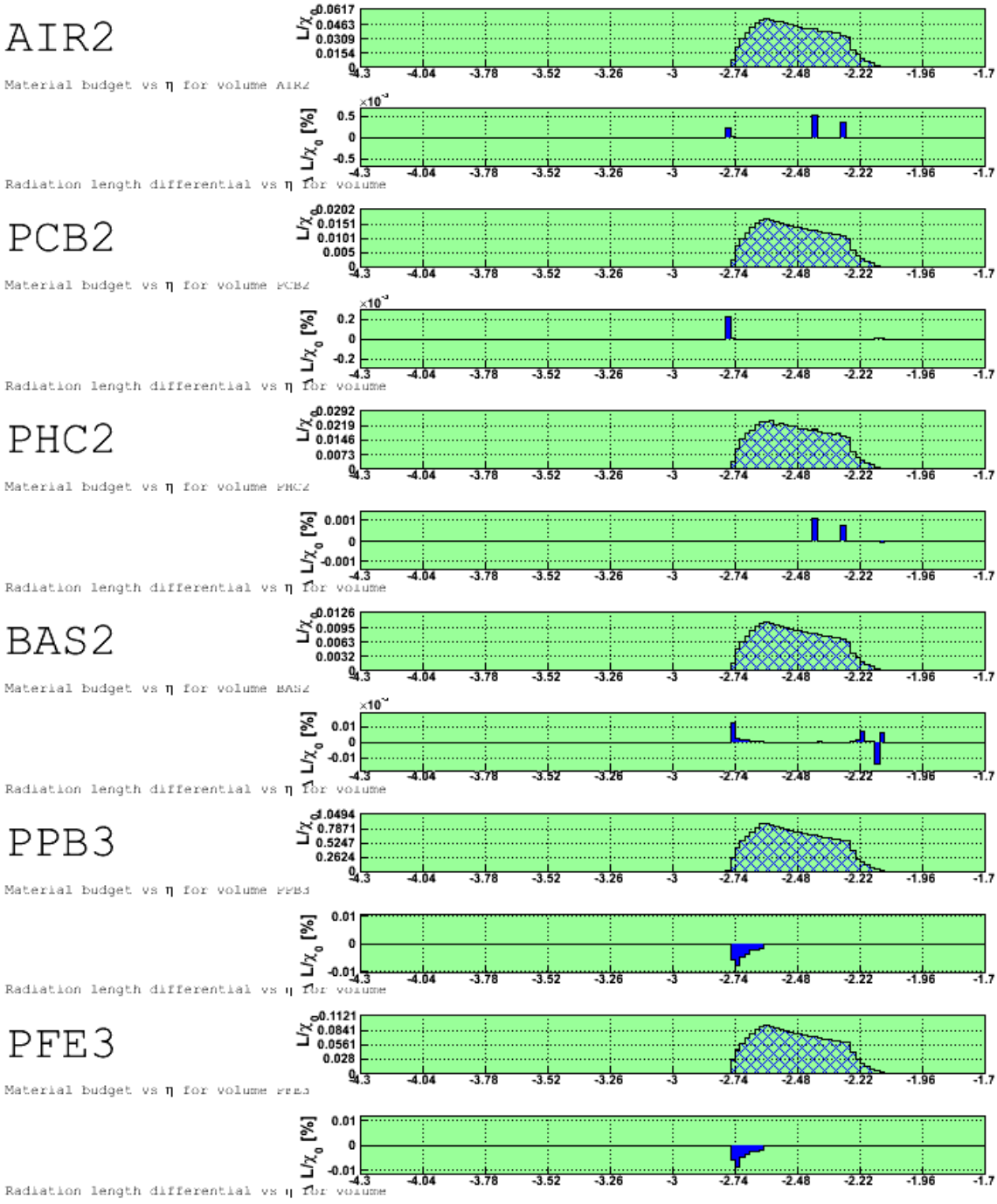

PHS3




PMD3

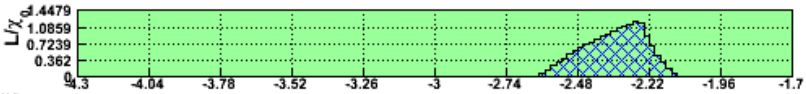


# 66 Validation Summary: Detector PHMD in Geometry y2011

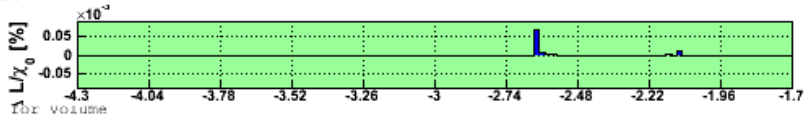


# 67 Validation Summary: Detector PHMD in Geometry y2011

PHS4

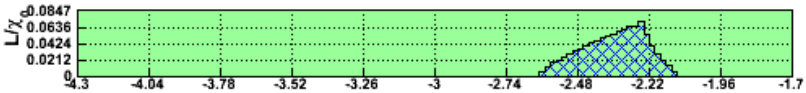



Material budget vs η for volume PHS4

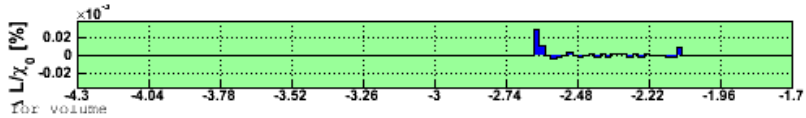



Radiation length differential vs η for volume

PMD4

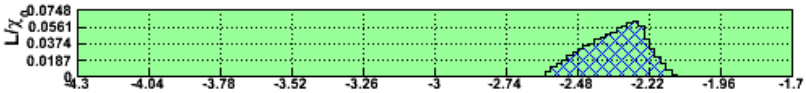



Material budget vs η for volume PMD4

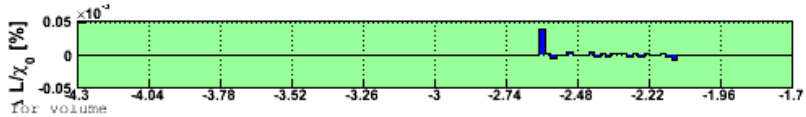



Radiation length differential vs η for volume

AIR3

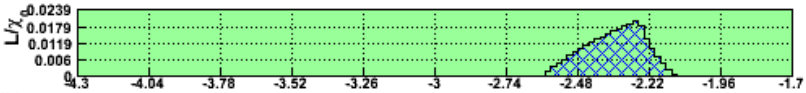



Material budget vs η for volume AIR3

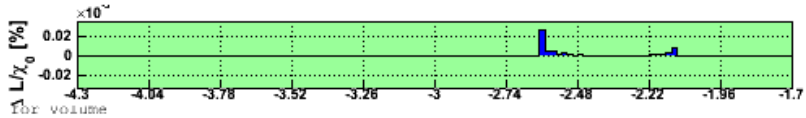



Radiation length differential vs η for volume

PCB3

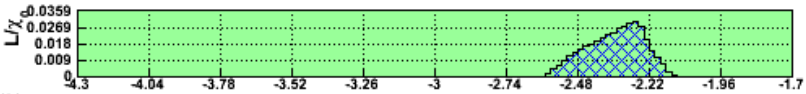



Material budget vs η for volume PCB3

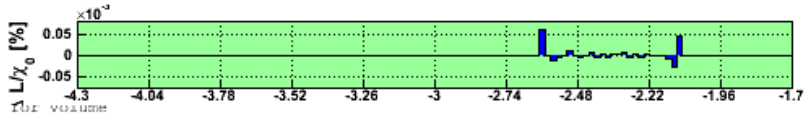



Radiation length differential vs η for volume

PHC3

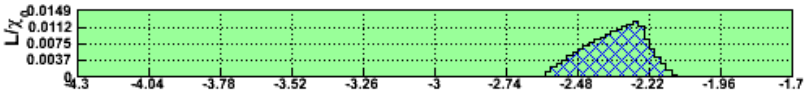



Material budget vs η for volume PHC3

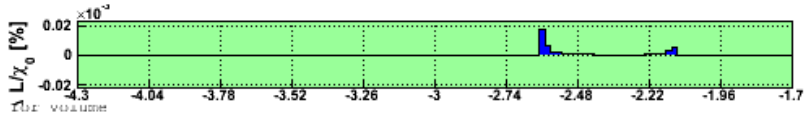



Radiation length differential vs η for volume

BAS3



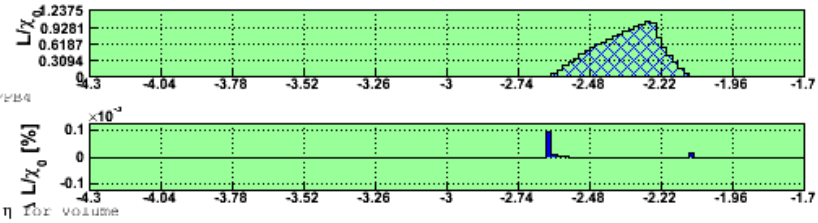

Material budget vs η for volume BAS3




Radiation length differential vs η for volume

# 68 Validation Summary: Detector PHMD in Geometry y2011

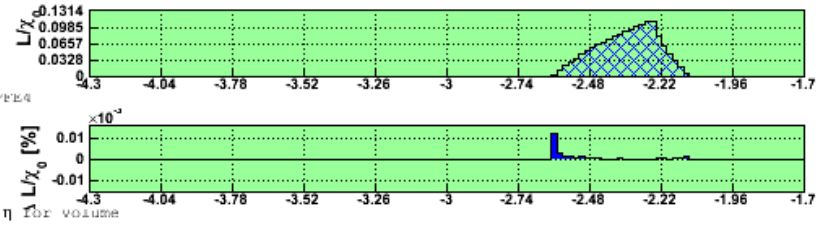
PPB4




Material budget vs η for volume PPB4

Radiation length differential vs η for volume

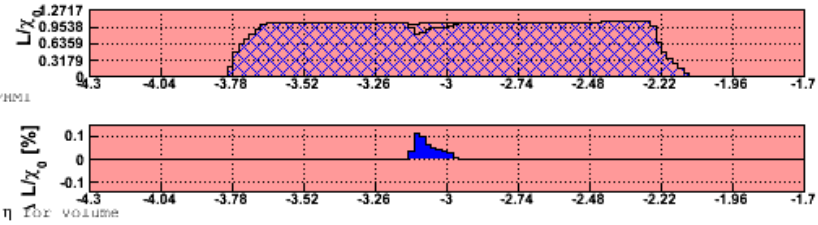
PFE4




Material budget vs η for volume PFE4

Radiation length differential vs η for volume

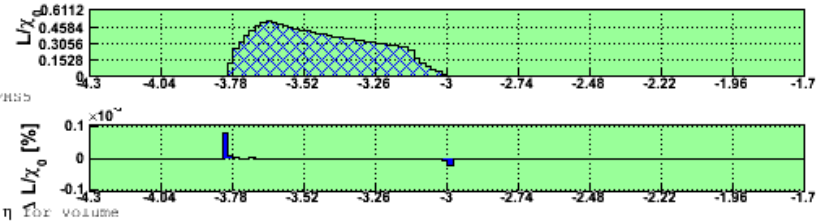
PHM1




Material budget vs η for volume PHM1

Radiation length differential vs η for volume

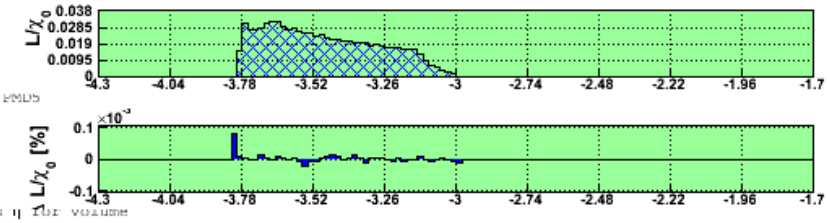
PHS5




Material budget vs η for volume PHS5

Radiation length differential vs η for volume

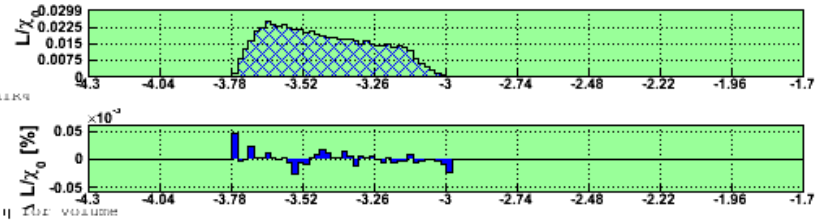
PMD5




Material budget vs η for volume PMD5

Radiation length differential vs η for volume

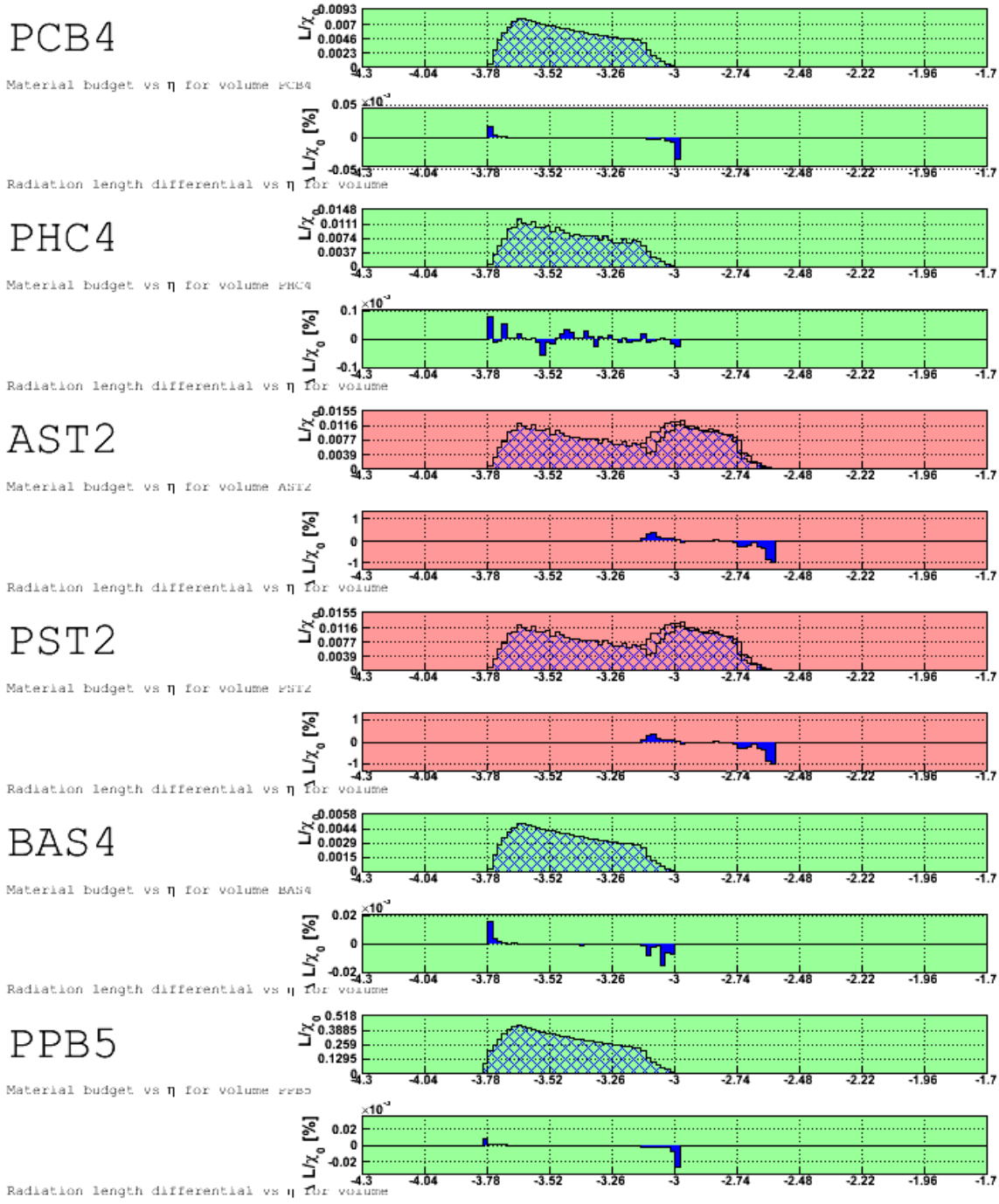
AIR4




Material budget vs η for volume AIR4

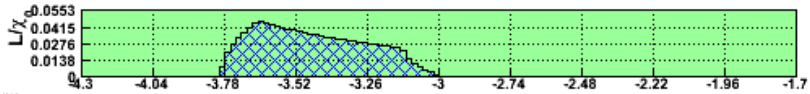
Radiation length differential vs η for volume

# 69 Validation Summary: Detector PHMD in Geometry y2011

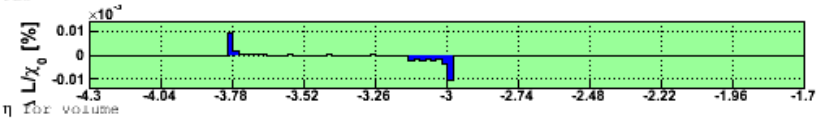


# 70 Validation Summary: Detector PHMD in Geometry y2011

PFE5

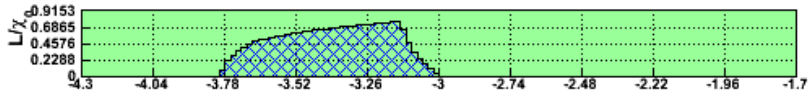



Material budget vs η for volume PFE5

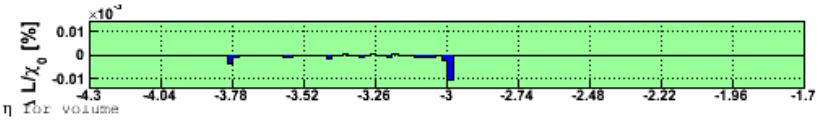



Radiation length differential vs η for volume

PHS6

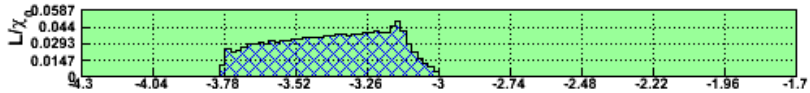



Material budget vs η for volume PHS6

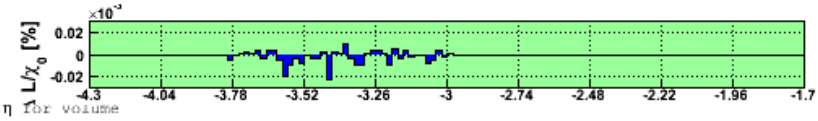



Radiation length differential vs η for volume

PMD6

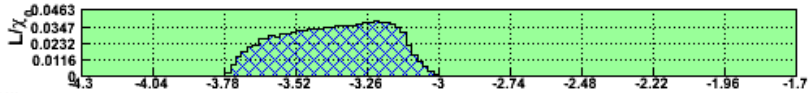



Material budget vs η for volume PMD6

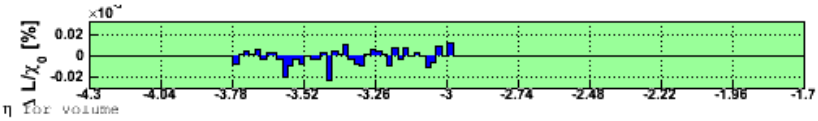



Radiation length differential vs η for volume

AIR5

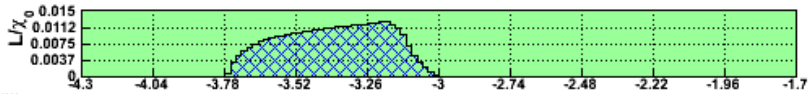



Material budget vs η for volume AIR5

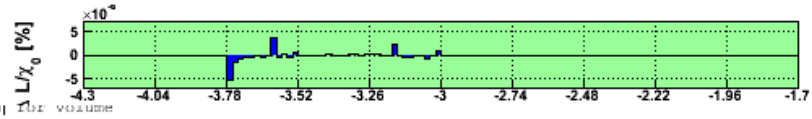



Radiation length differential vs η for volume

PCB5

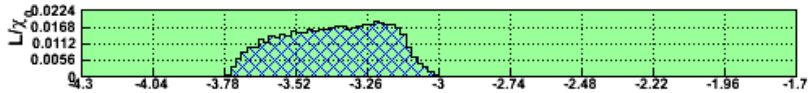



Material budget vs η for volume PCB5

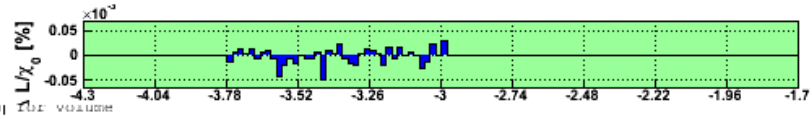



Radiation length differential vs η for volume

PHC5



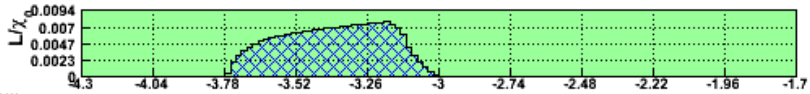

Material budget vs η for volume PHC5



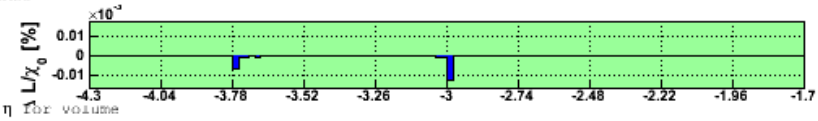

Radiation length differential vs η for volume

# 71 Validation Summary: Detector PHMD in Geometry y2011

BAS5

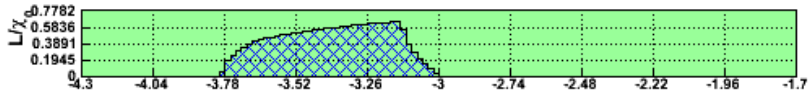



Material budget vs η for volume BAS5

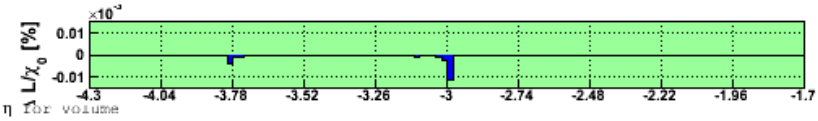



Radiation length differential vs η for volume

PPB6

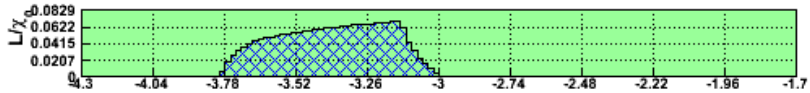



Material budget vs η for volume PPB6

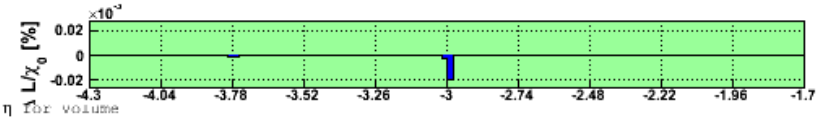



Radiation length differential vs η for volume

PFE6

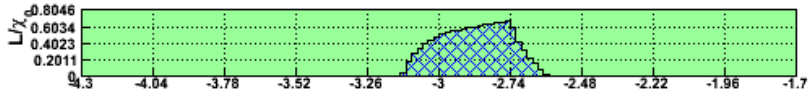



Material budget vs η for volume PFE6

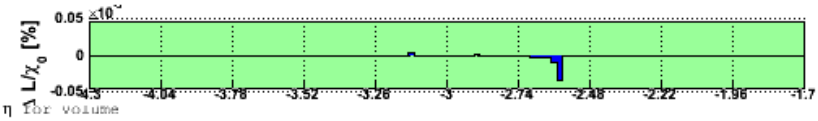



Radiation length differential vs η for volume

PHS7

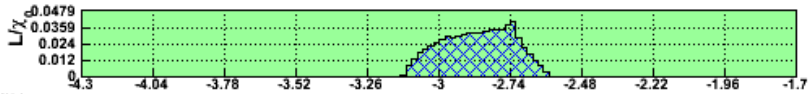



Material budget vs η for volume PHS7

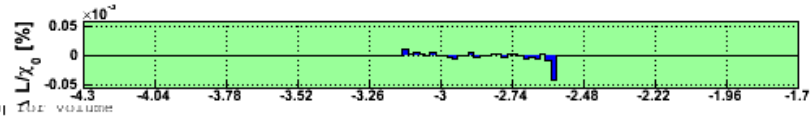



Radiation length differential vs η for volume

PMD7

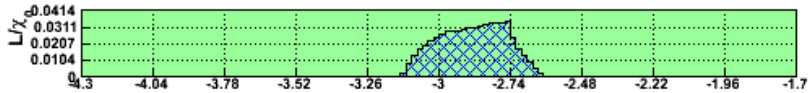



Material budget vs η for volume PMD7

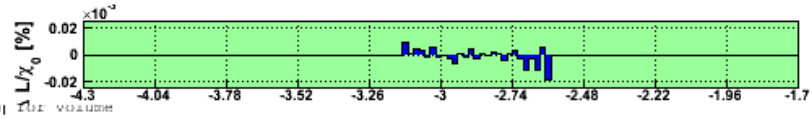



Radiation length differential vs η for volume

AIR6



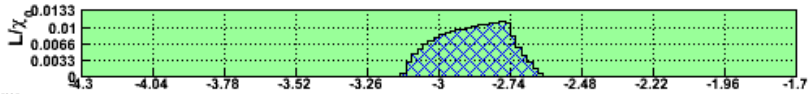

Material budget vs η for volume AIR6



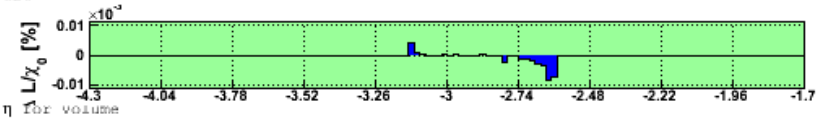

Radiation length differential vs η for volume

# 72 Validation Summary: Detector PHMD in Geometry y2011

PCB6

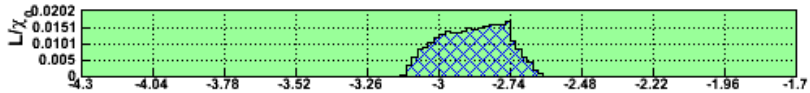



Material budget vs η for volume PCB6

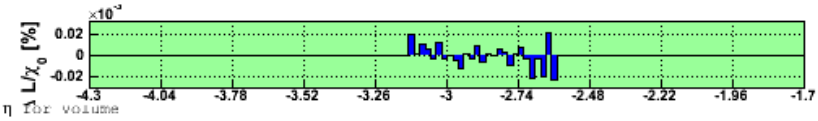



Radiation length differential vs η for volume

PHC6

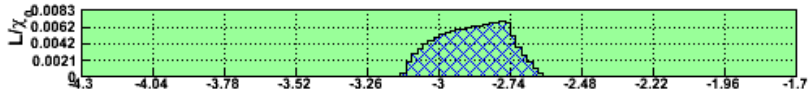



Material budget vs η for volume PHC6

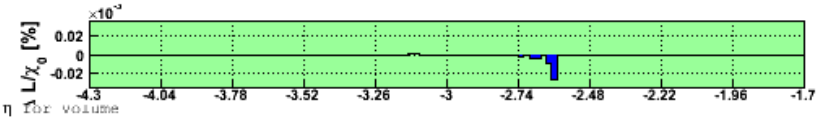



Radiation length differential vs η for volume

BAS6

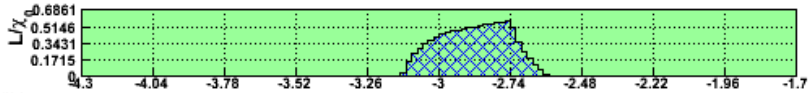



Material budget vs η for volume BAS6

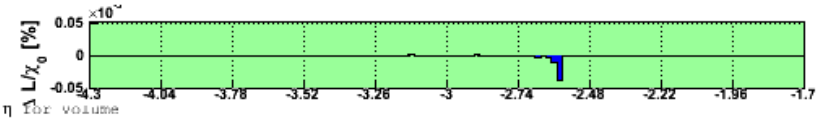



Radiation length differential vs η for volume

PPB7

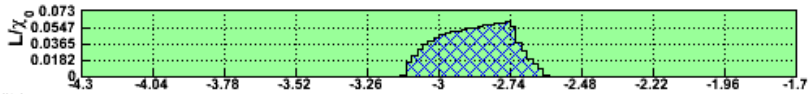



Material budget vs η for volume PPB7

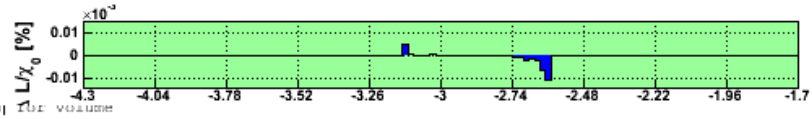



Radiation length differential vs η for volume

PFE7

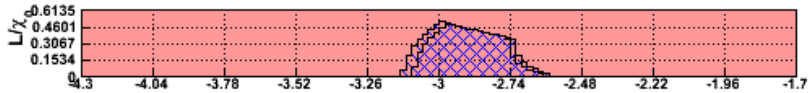



Material budget vs η for volume PFE7

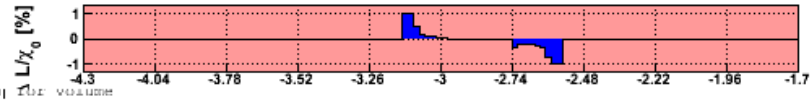



Radiation length differential vs η for volume

PHS8



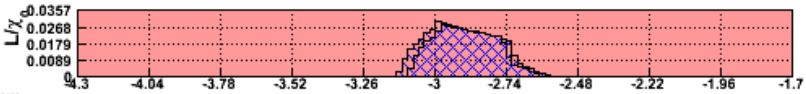

Material budget vs η for volume PHS8



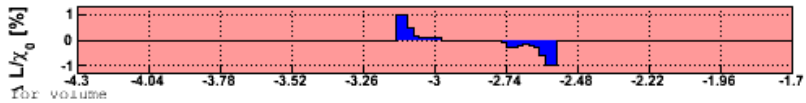

Radiation length differential vs η for volume

# 73 Validation Summary: Detector PHMD in Geometry y2011

PMD8

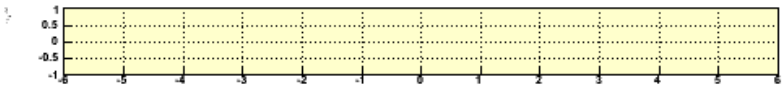



Material budget vs η for volume PMD8

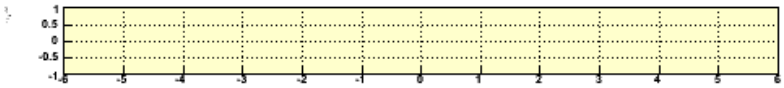



Radiation length differential vs η for volume

AIR7

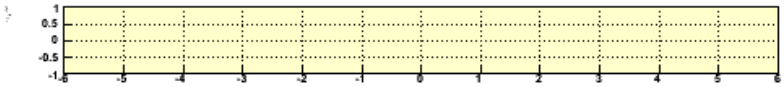



Material budget vs η for volume AIR7

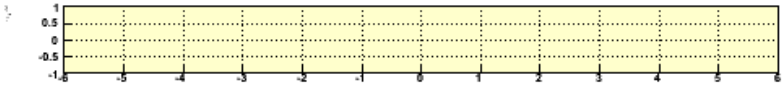



Radiation length differential vs η for volume

PCB7

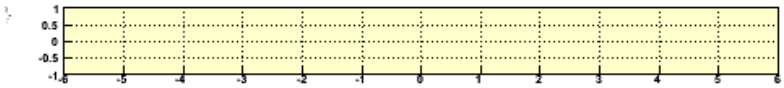



Material budget vs η for volume PCB7

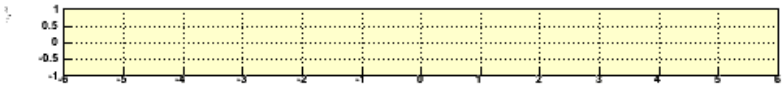



Radiation length differential vs η for volume

PHC7

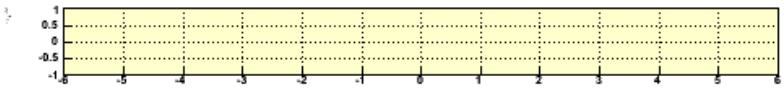



Material budget vs η for volume PHC7

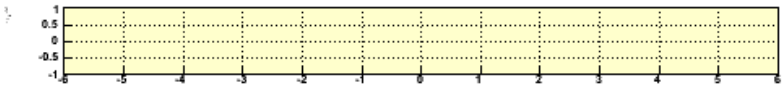



Radiation length differential vs η for volume

BAS7

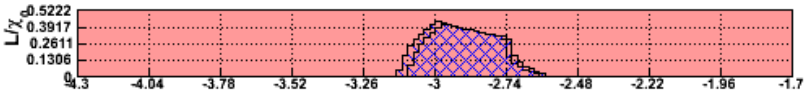



Material budget vs η for volume BAS7

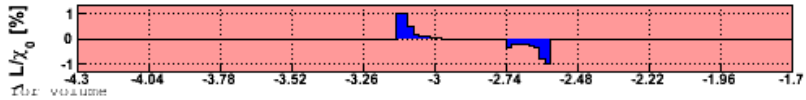



Radiation length differential vs η for volume

PPB8

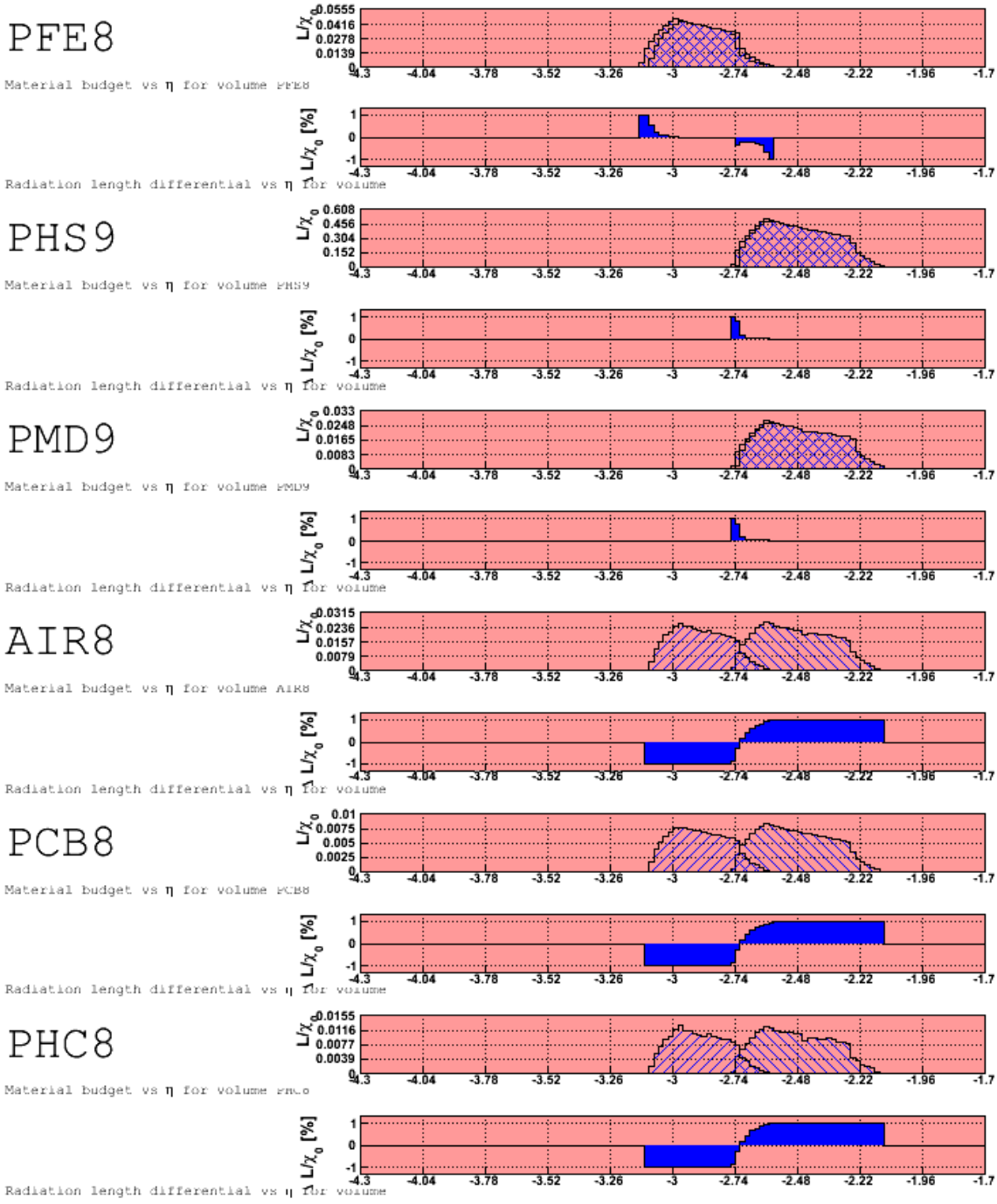



Material budget vs η for volume PPB8



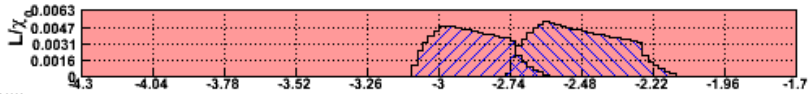

Radiation length differential vs η for volume

# 74 Validation Summary: Detector PHMD in Geometry y2011

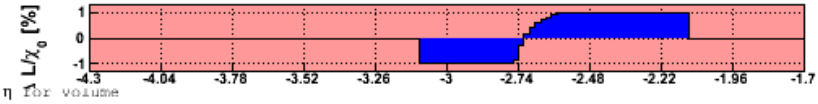


# 75 Validation Summary: Detector PHMD in Geometry y2011

BAS8

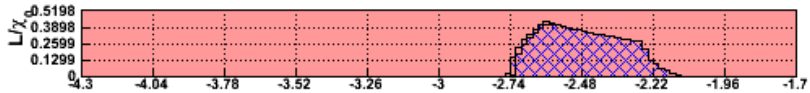



Material budget vs η for volume BAS8

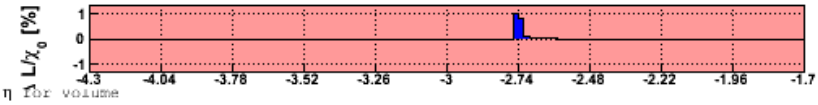



Radiation length differential vs η for volume

PPB9

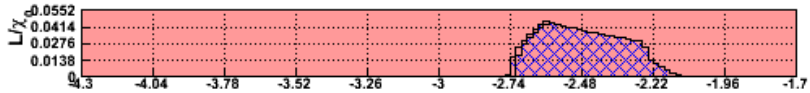



Material budget vs η for volume PPB9

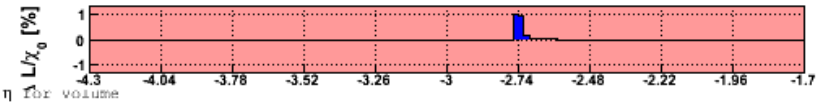



Radiation length differential vs η for volume

PFE9

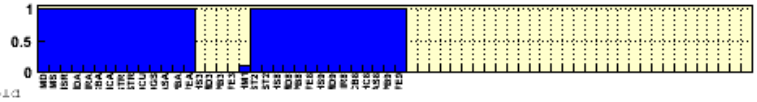



Material budget vs η for volume PFE9




Radiation length differential vs η for volume

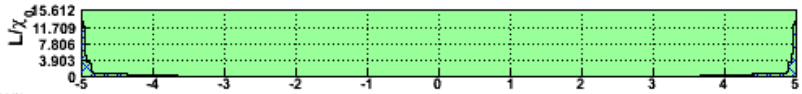
SUMMARY



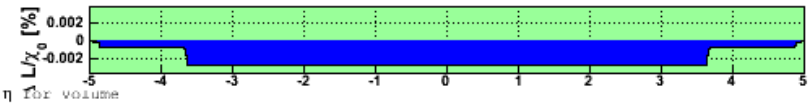

Summary of volumes above 0.5 * threshold

# 76 Validation Summary: Detector PIPE in Geometry y2011

PIPE

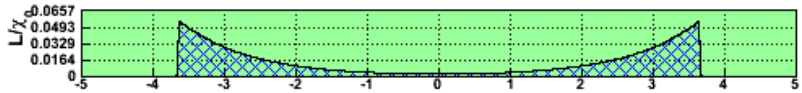



Material budget vs η for volume PIPE

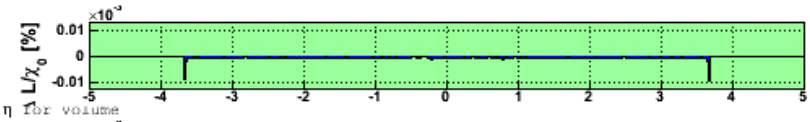



Radiation length differential vs η for volume

PIPC

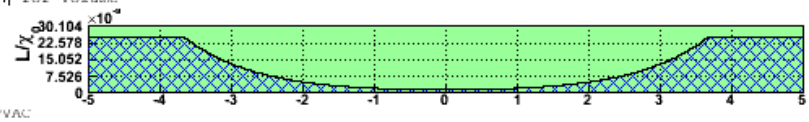



Material budget vs η for volume PIPC

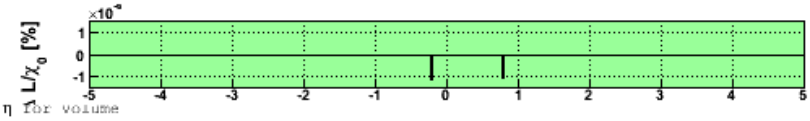



Radiation length differential vs η for volume

PVAC

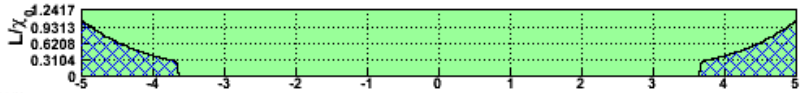



Material budget vs η for volume PVAC

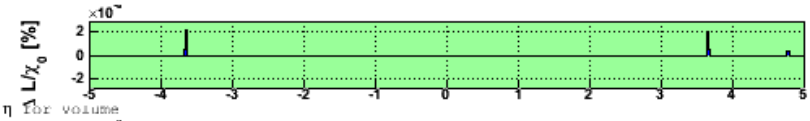



Radiation length differential vs η for volume

PIPO

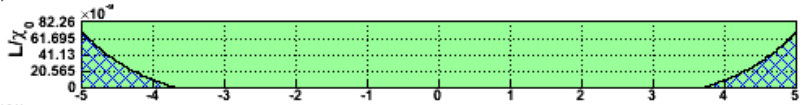



Material budget vs η for volume PIPO

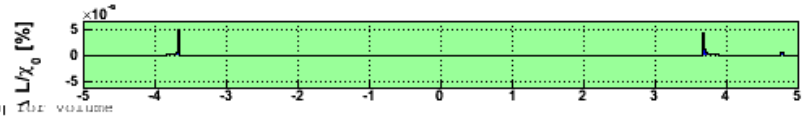



Radiation length differential vs η for volume

PVAO

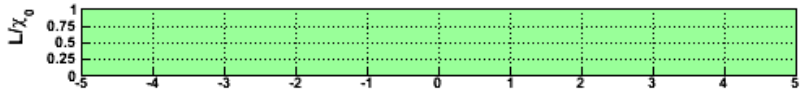



Material budget vs η for volume PVAO

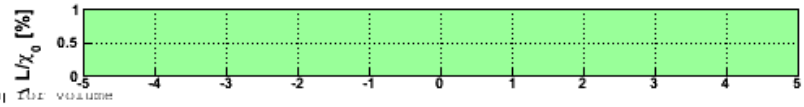



Radiation length differential vs η for volume

PIPI



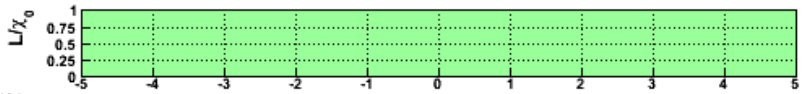

Material budget vs η for volume PIPI



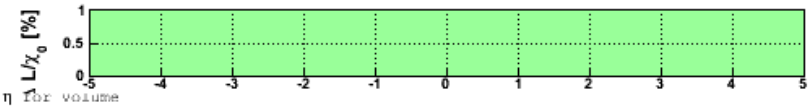

Radiation length differential vs η for volume

# 77 Validation Summary: Detector PIPE in Geometry y2011

PVAI

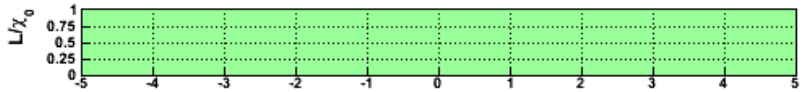



Material budget vs η for volume PVAI

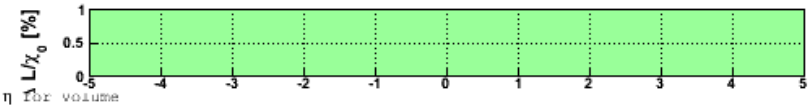



Radiation length differential vs η for volume

PIPT

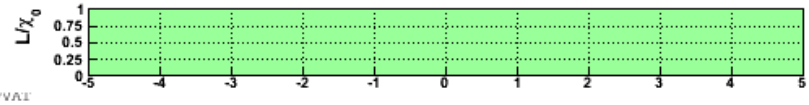



Material budget vs η for volume PIPT

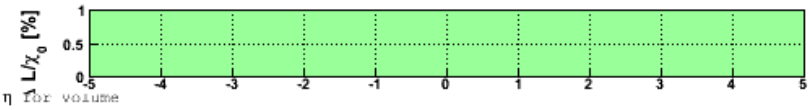



Radiation length differential vs η for volume

PVAT

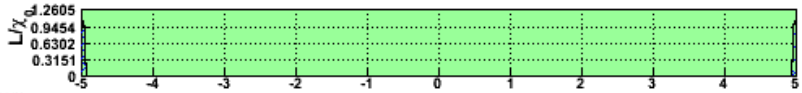



Material budget vs η for volume PVAT

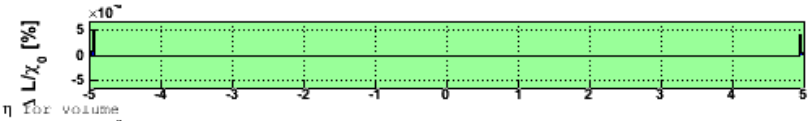



Radiation length differential vs η for volume

PIPB

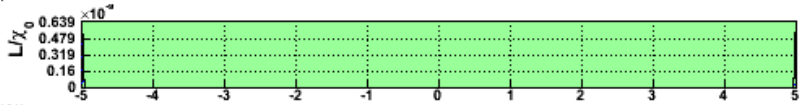



Material budget vs η for volume PIPB

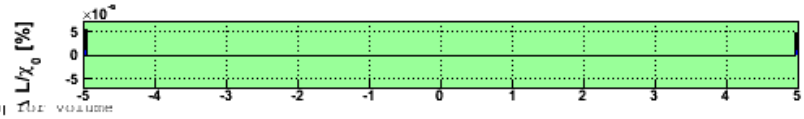



Radiation length differential vs η for volume

PVAB

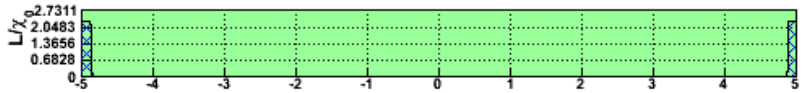



Material budget vs η for volume PVAB

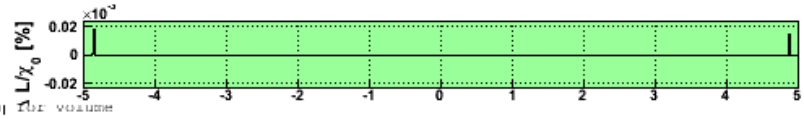



Radiation length differential vs η for volume

PFLO



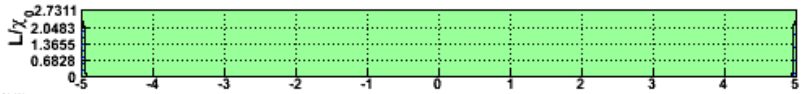

Material budget vs η for volume PFLO



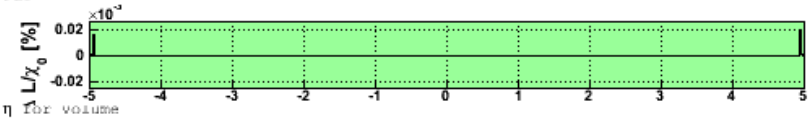

Radiation length differential vs η for volume

# 78 Validation Summary: Detector PIPE in Geometry y2011

PFLT

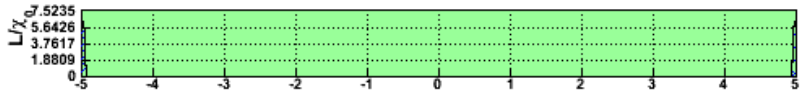



Material budget vs η for volume PFLT

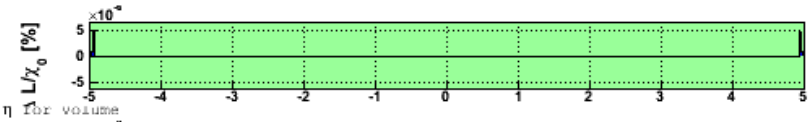



Radiation length differential vs η for volume

PIPS

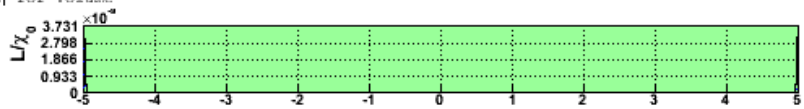



Material budget vs η for volume PIPS

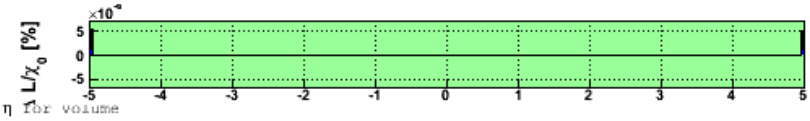



Radiation length differential vs η for volume

PVAS

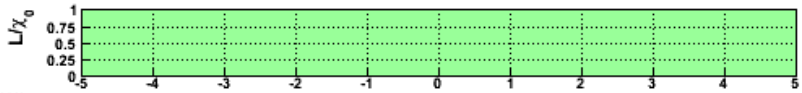



Material budget vs η for volume PVAS

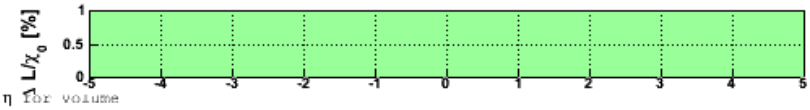



Radiation length differential vs η for volume

PRIS

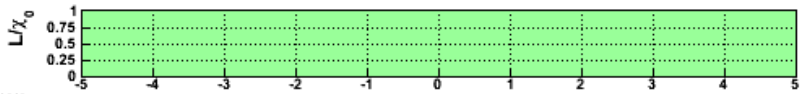



Material budget vs η for volume PRIS

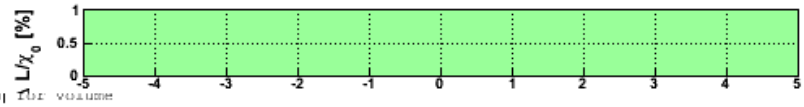



Radiation length differential vs η for volume

PRID

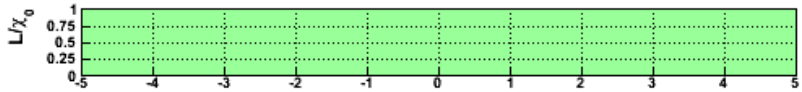



Material budget vs η for volume PRID

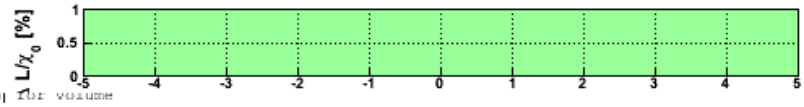



Radiation length differential vs η for volume

PRIB



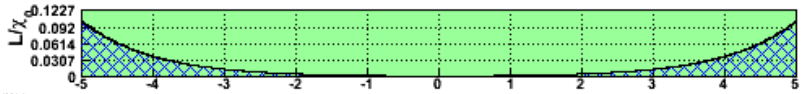

Material budget vs η for volume PRIB



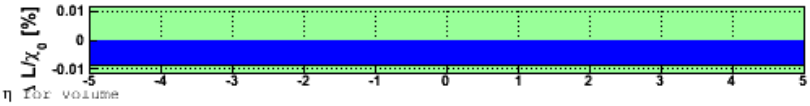

Radiation length differential vs η for volume

# 79 Validation Summary: Detector PIPE in Geometry y2011

PWRP

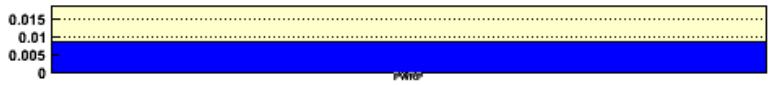



Material budget vs η for volume PWRP




Radiation length differential vs η for volume

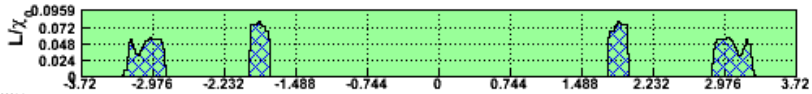
SUMMARY



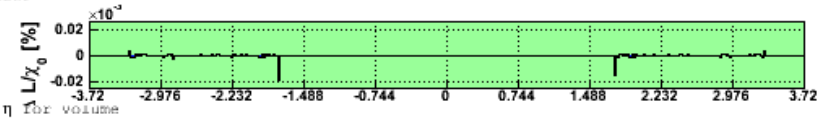

Summary of volumes above 0.5 * threshold

# 80 Validation Summary: Detector SBSP in Geometry y2011

SBSP

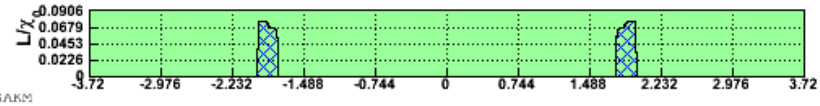



Material budget vs η for volume SBSP

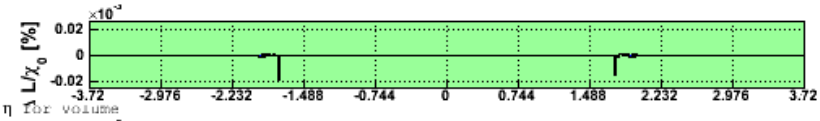



Radiation length differential vs η for volume

SAKM

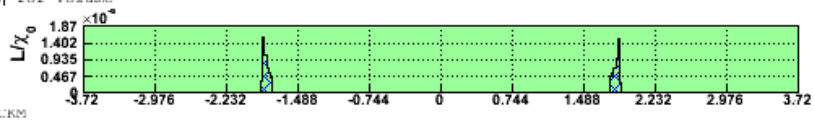



Material budget vs η for volume SAKM

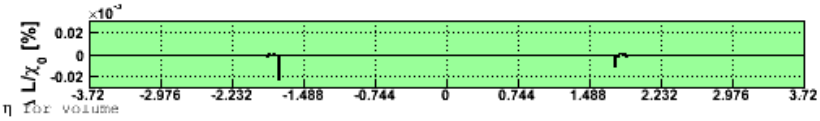



Radiation length differential vs η for volume

SCKM

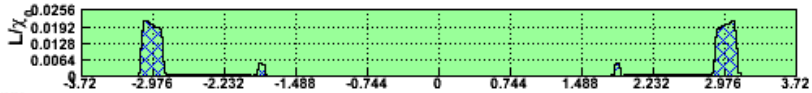



Material budget vs η for volume SCKM

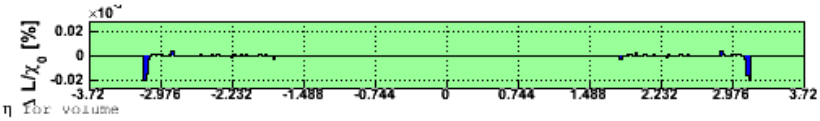



Radiation length differential vs η for volume

SBMM

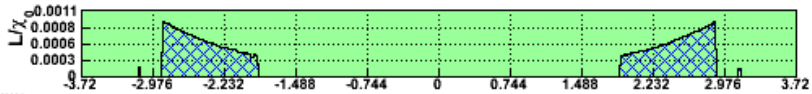



Material budget vs η for volume SBMM

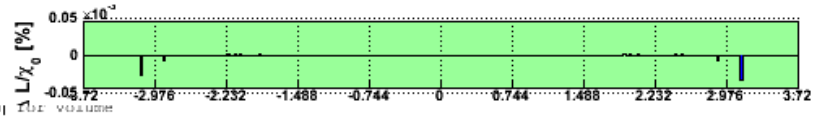



Radiation length differential vs η for volume

SMRD

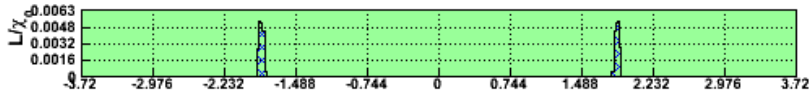



Material budget vs η for volume SMRD

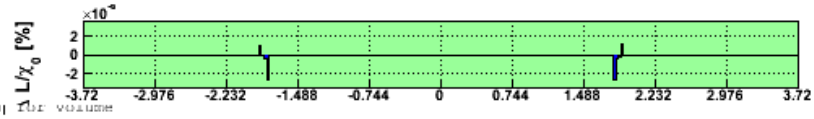



Radiation length differential vs η for volume

SBMO



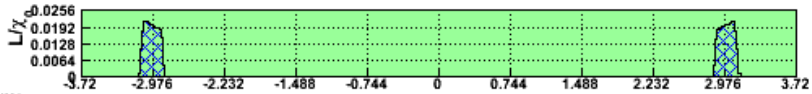

Material budget vs η for volume SBMO



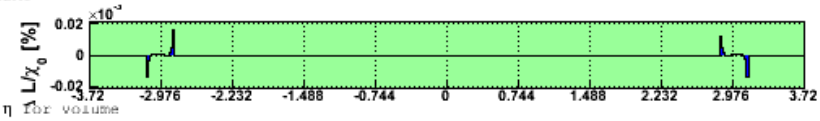

Radiation length differential vs η for volume

# 81 Validation Summary: Detector SBSP in Geometry y2011

SBMI

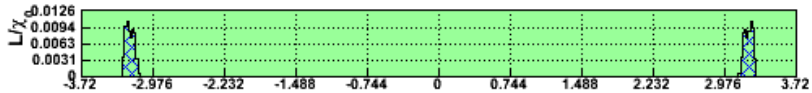



Material budget vs η for volume SBMI

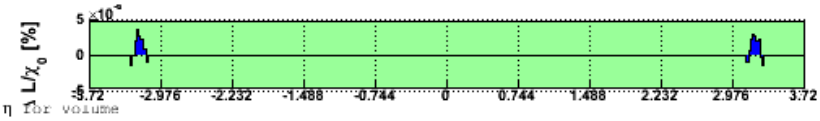



Radiation length differential vs η for volume

SBRL

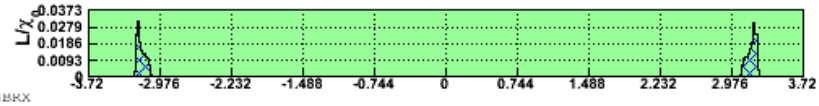



Material budget vs η for volume SBRL

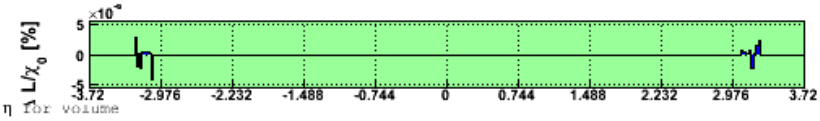



Radiation length differential vs η for volume

SBRX

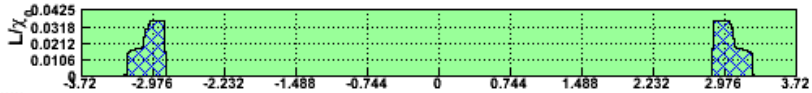



Material budget vs η for volume SBRX

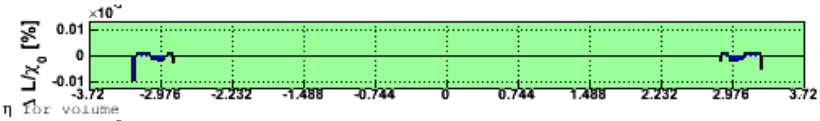



Radiation length differential vs η for volume

SBSR

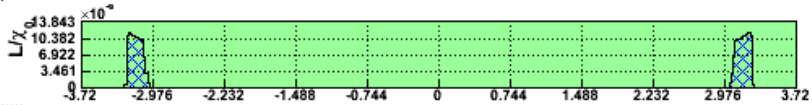



Material budget vs η for volume SBSR

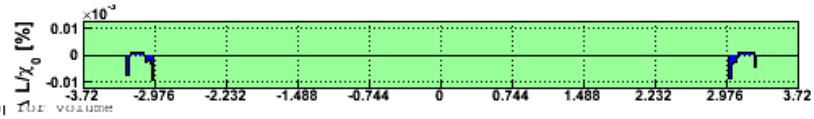



Radiation length differential vs η for volume

SBCR

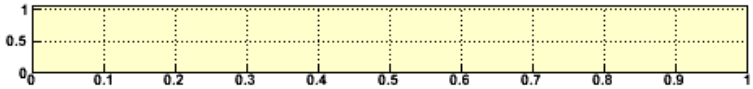



Material budget vs η for volume SBCR




Radiation length differential vs η for volume

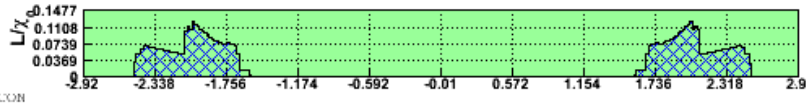
SUMMARY



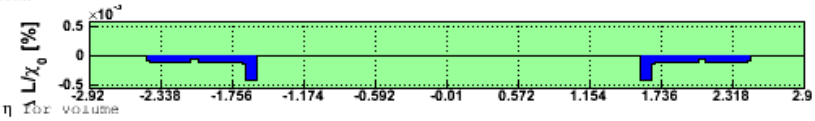

Summary of volumes above 0.5 - threshold

# 82 Validation Summary: Detector SCON in Geometry y2011

SCON

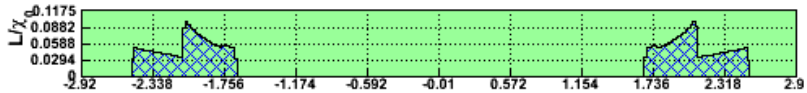



Material budget vs η for volume SCON

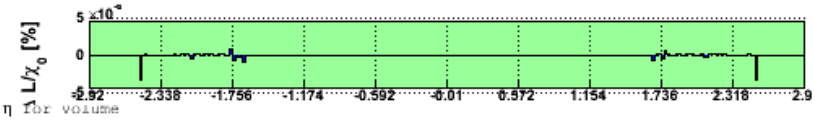



Radiation length differential vs η for volume

SGRA

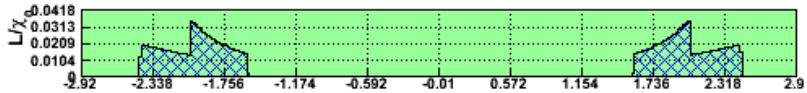



Material budget vs η for volume SGRA

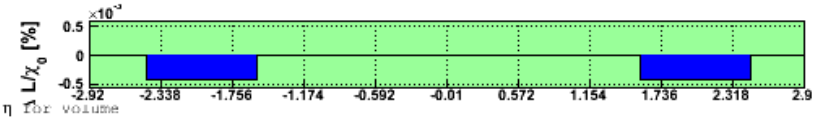



Radiation length differential vs η for volume

SCMY

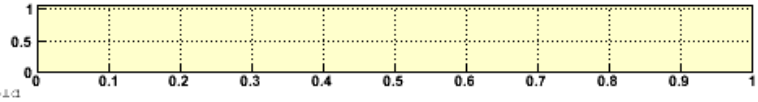



Material budget vs η for volume SCMY




Radiation length differential vs η for volume

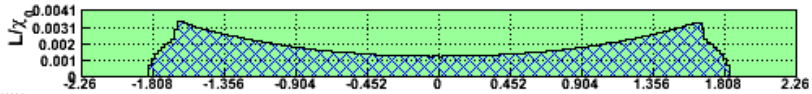
SUMMARY



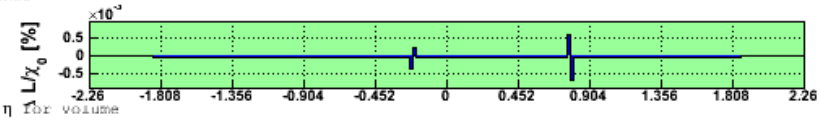

Summary of volumes above 0.5 * threshold

# 83 Validation Summary: Detector SROD in Geometry y2011

SROD

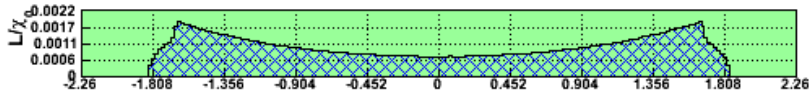



Material budget vs η for volume SROD

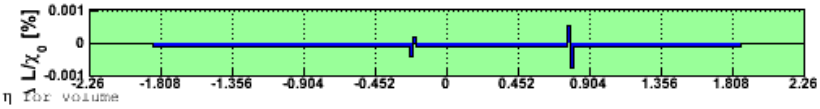



Radiation length differential vs η for volume

SRON

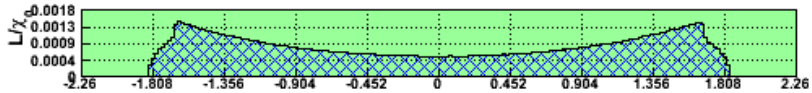



Material budget vs η for volume SRON

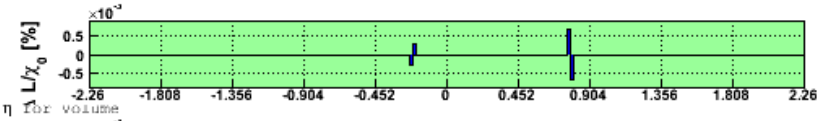



Radiation length differential vs η for volume

SROI

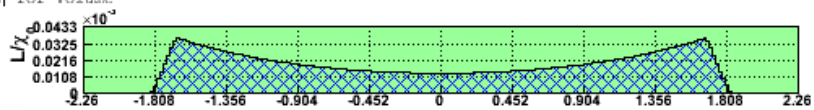



Material budget vs η for volume SROI

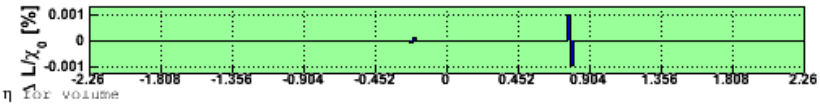



Radiation length differential vs η for volume

SROH

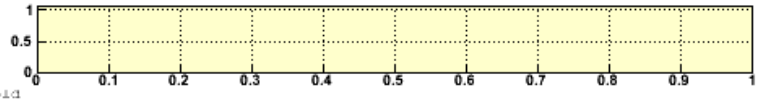



Material budget vs η for volume SROH




Radiation length differential vs η for volume

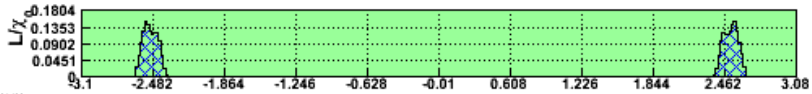
SUMMARY



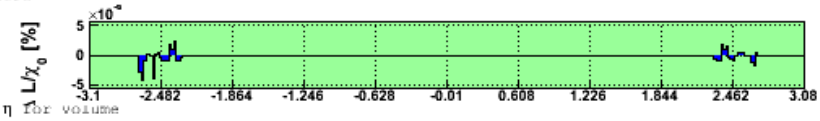

Summary of volumes above 0.5 * threshold

# 84 Validation Summary: Detector SUPO in Geometry y2011

SUPO

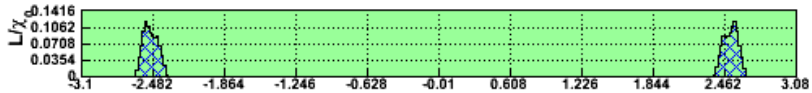



Material budget vs η for volume SUPO

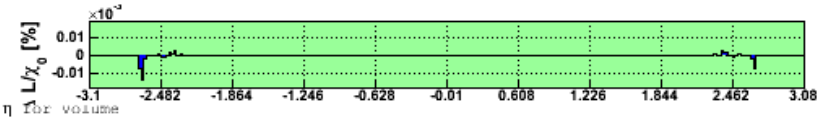



Radiation length differential vs η for volume

SUPL

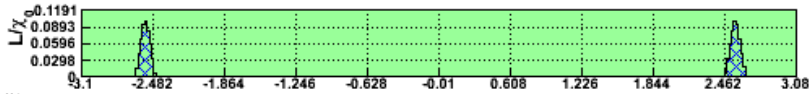



Material budget vs η for volume SUPL

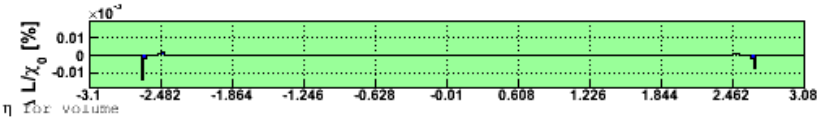



Radiation length differential vs η for volume

SLRL

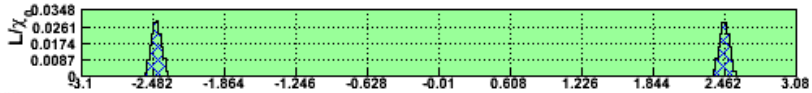



Material budget vs η for volume SLRL

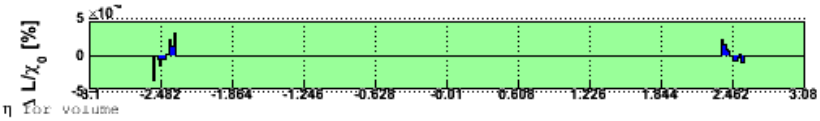



Radiation length differential vs η for volume

SLWL

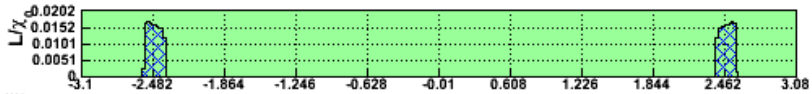



Material budget vs η for volume SLWL

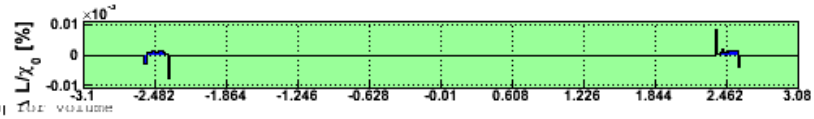



Radiation length differential vs η for volume

SLHD

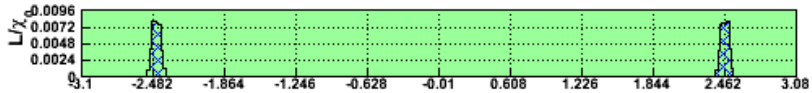



Material budget vs η for volume SLHD

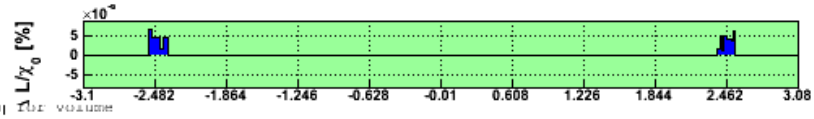



Radiation length differential vs η for volume

SLXW



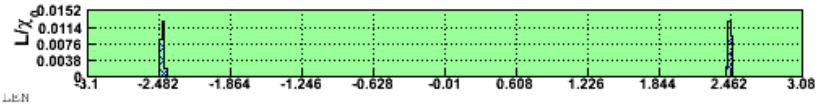

Material budget vs η for volume SLXW



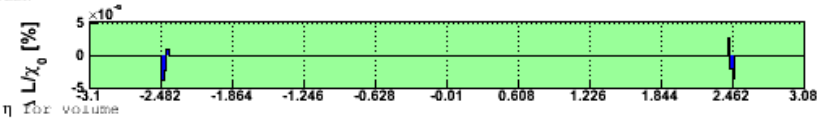

Radiation length differential vs η for volume

# 85 Validation Summary: Detector SUPO in Geometry y2011

SLEN

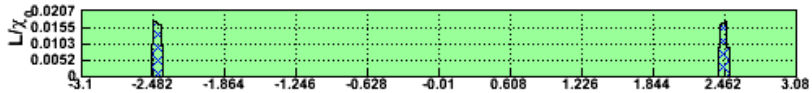



Material budget vs η for volume SLEN

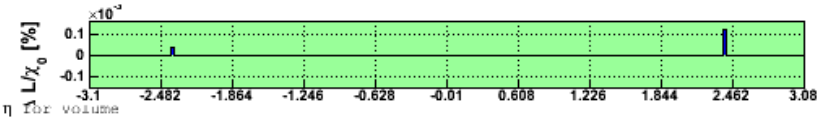



Radiation length differential vs η for volume

SLFX

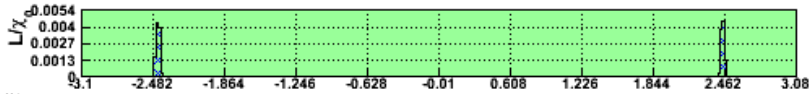



Material budget vs η for volume SLFX

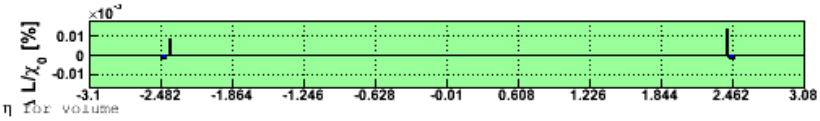



Radiation length differential vs η for volume

SLBL

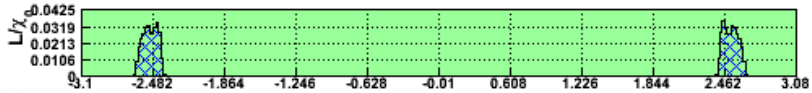



Material budget vs η for volume SLBL

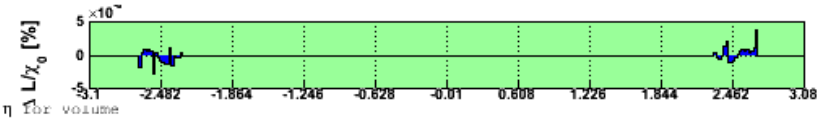



Radiation length differential vs η for volume

SUPH

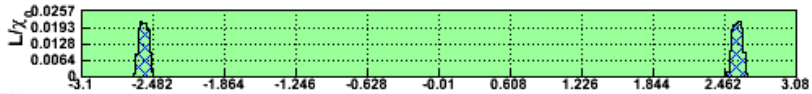



Material budget vs η for volume SUPH

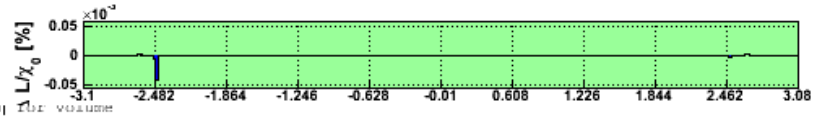



Radiation length differential vs η for volume

SHRL

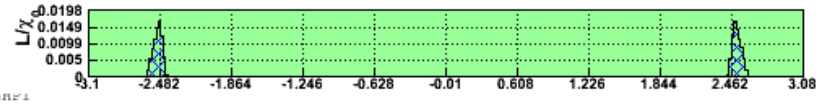



Material budget vs η for volume SHRL

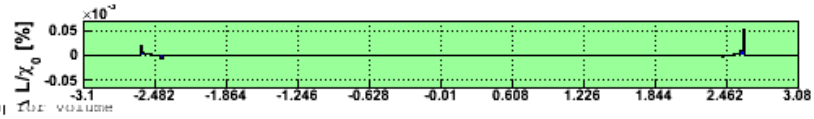



Radiation length differential vs η for volume

SHPT



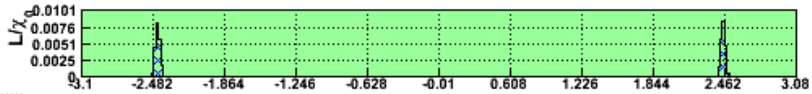

Material budget vs η for volume SHPT



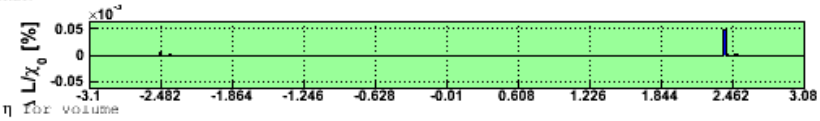

Radiation length differential vs η for volume

# 86 Validation Summary: Detector SUPO in Geometry y2011

SHBR

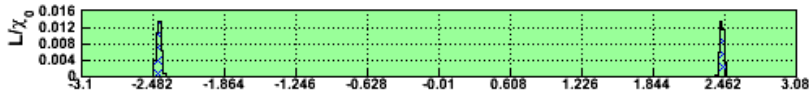



Material budget vs η for volume SHBR

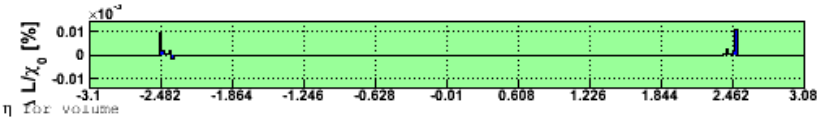



Radiation length differential vs η for volume

SHBK

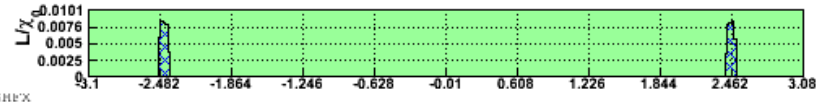



Material budget vs η for volume SHBK

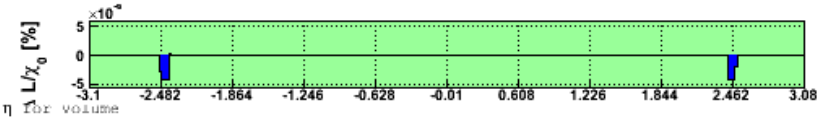



Radiation length differential vs η for volume

SHFX

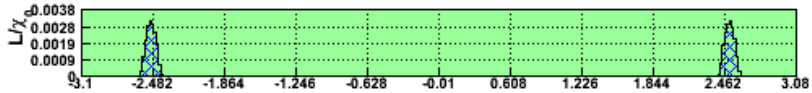



Material budget vs η for volume SHFX

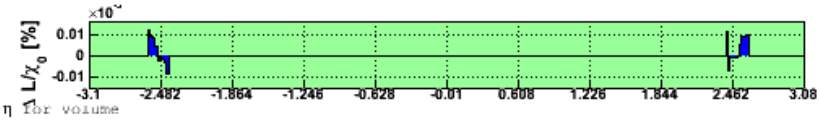



Radiation length differential vs η for volume

SHST

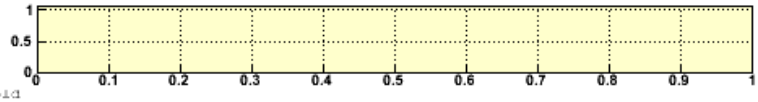



Material budget vs η for volume SHST




Radiation length differential vs η for volume

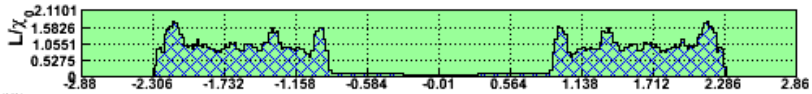
SUMMARY



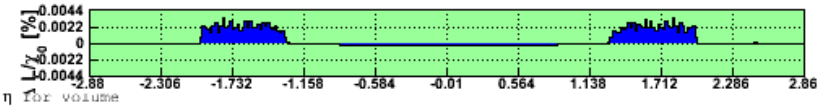

Summary of volumes above 0.5 * threshold

# 87 Validation Summary: Detector TPCE in Geometry y2011

TPCE

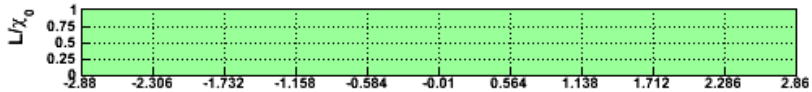



Material budget vs η for volume TPCE

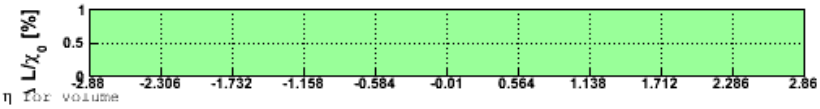



Radiation length differential vs η for volume

TPCM

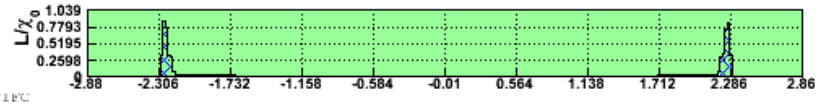



Material budget vs η for volume TPCM

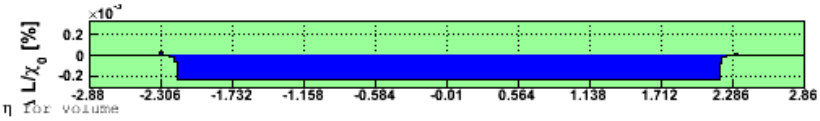



Radiation length differential vs η for volume

TIFC

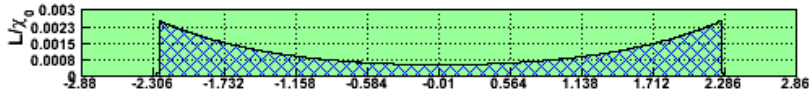



Material budget vs η for volume TIFC

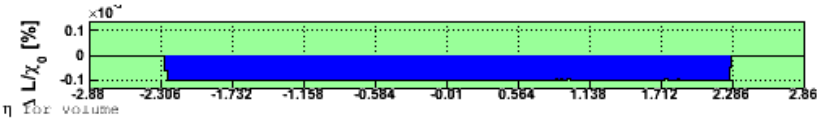



Radiation length differential vs η for volume

TIKA

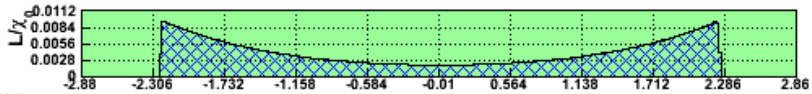



Material budget vs η for volume TIKA

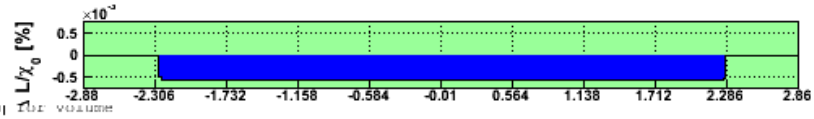



Radiation length differential vs η for volume

TINX

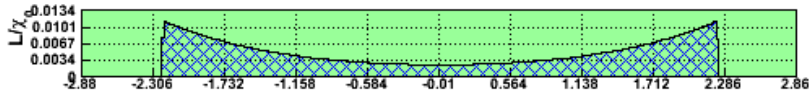



Material budget vs η for volume TINX

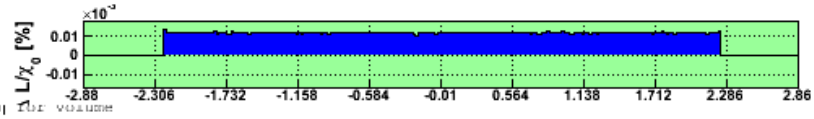



Radiation length differential vs η for volume

TIAD



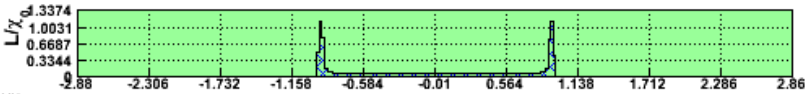

Material budget vs η for volume TIAD



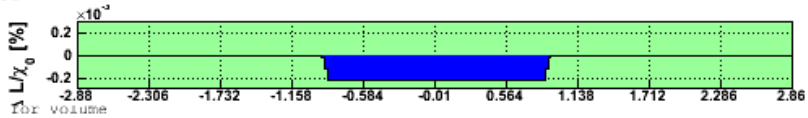

Radiation length differential vs η for volume

# 88 Validation Summary: Detector TPCE in Geometry y2011

TOFC

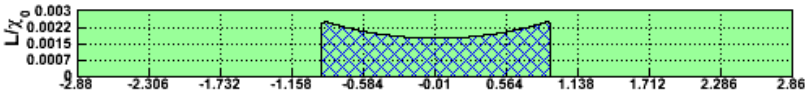



Material budget vs η for volume TOFC

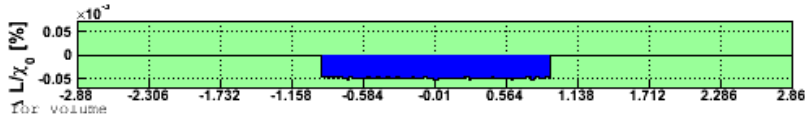



Radiation length differential vs η for volume

TOAD

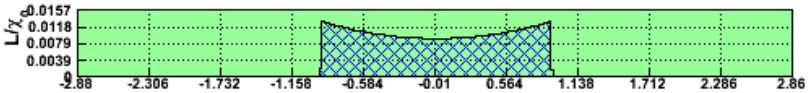



Material budget vs η for volume TOAD

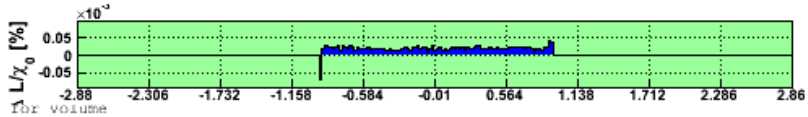



Radiation length differential vs η for volume

TOFS

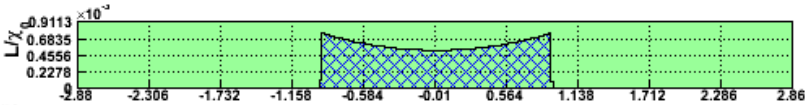



Material budget vs η for volume TOFS

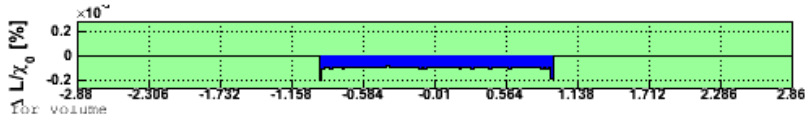



Radiation length differential vs η for volume

TOKA

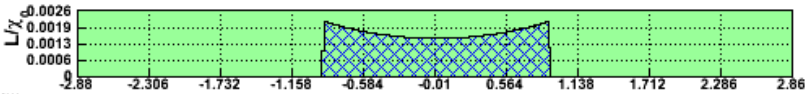



Material budget vs η for volume TOKA

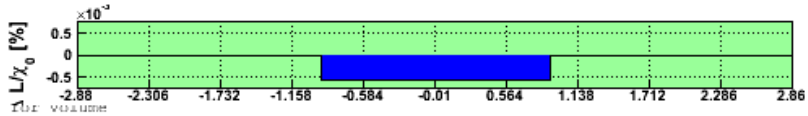



Radiation length differential vs η for volume

TONX

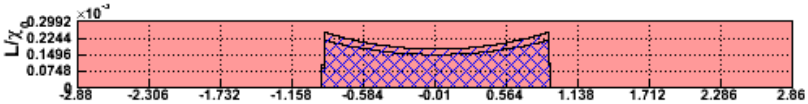



Material budget vs η for volume TONX

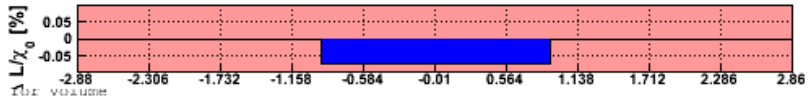



Radiation length differential vs η for volume

TOIG



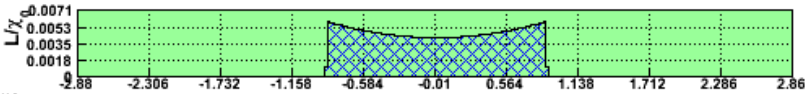

Material budget vs η for volume TOIG



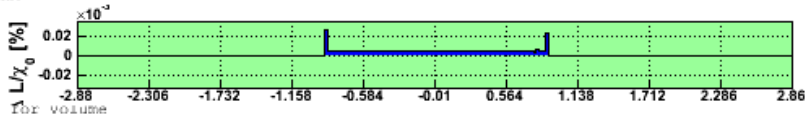

Radiation length differential vs η for volume

# 89 Validation Summary: Detector TPCE in Geometry y2011

TOHA

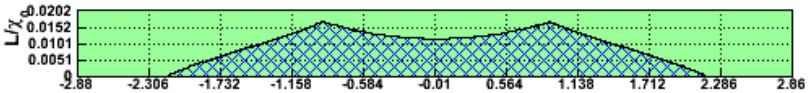



Material budget vs η for volume TOHA

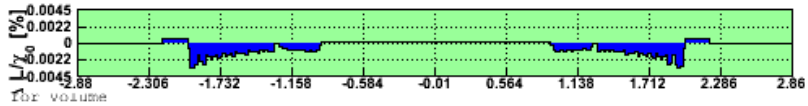



Radiation length differential vs η for volume

TPGV

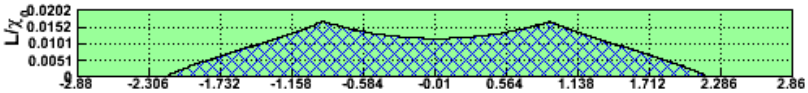



Material budget vs η for volume TPGV

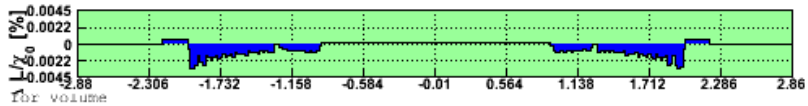



Radiation length differential vs η for volume

TPSS

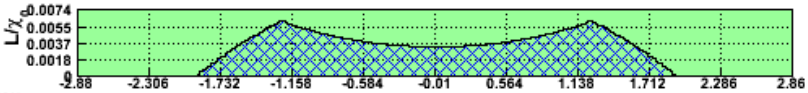



Material budget vs η for volume TPSS

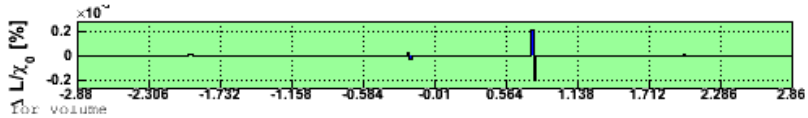



Radiation length differential vs η for volume

TPAD

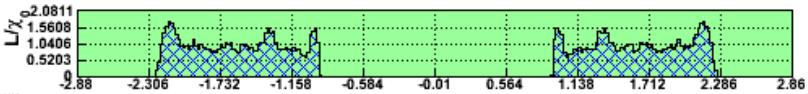



Material budget vs η for volume TPAD

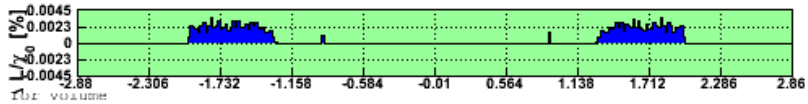



Radiation length differential vs η for volume

TSWH

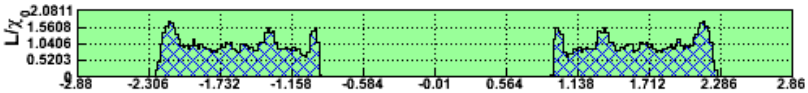



Material budget vs η for volume TSWH

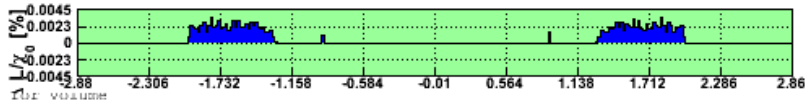



Radiation length differential vs η for volume

TSAW



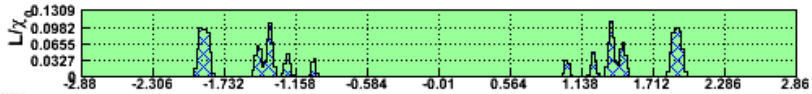

Material budget vs η for volume TSAW



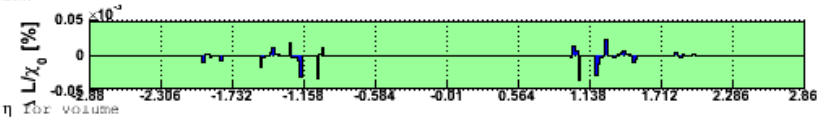

Radiation length differential vs η for volume

# 90 Validation Summary: Detector TPCE in Geometry y2011

TBRW

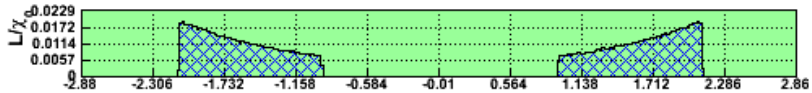



Material budget vs η for volume TBRW

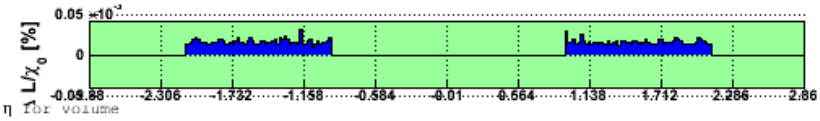



Radiation length differential vs η for volume

TWRB

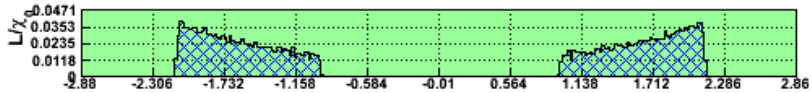



Material budget vs η for volume TWRB

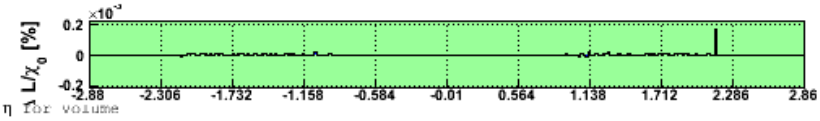



Radiation length differential vs η for volume

TWR1

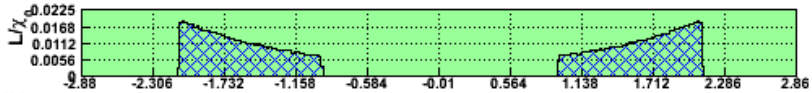



Material budget vs η for volume TWR1

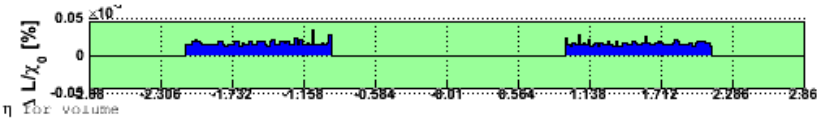



Radiation length differential vs η for volume

TWR2

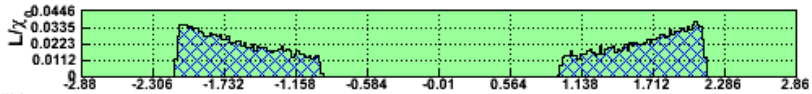



Material budget vs η for volume TWR2

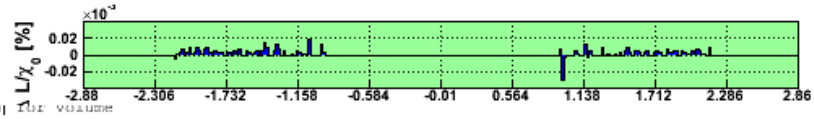



Radiation length differential vs η for volume

TWR3

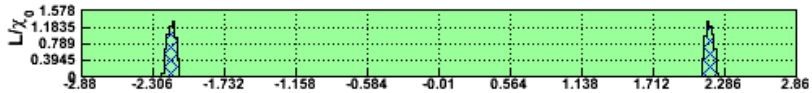



Material budget vs η for volume TWR3

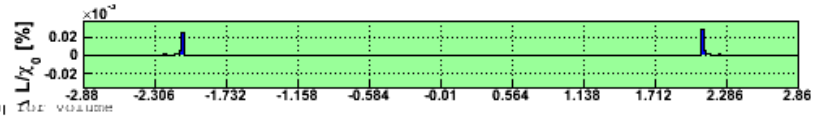



Radiation length differential vs η for volume

TWBT



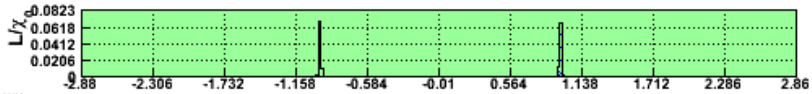

Material budget vs η for volume TWBT



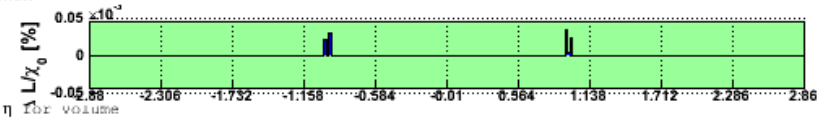

Radiation length differential vs η for volume

# 91 Validation Summary: Detector TPCE in Geometry y2011

TWTR

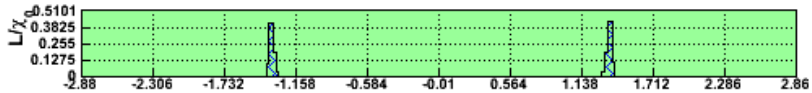



Material budget vs η for volume TWTR

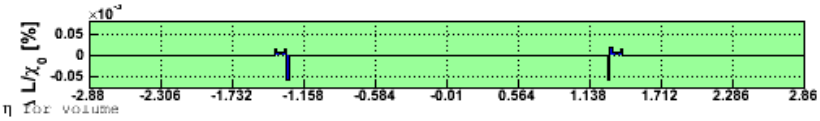



Radiation length differential vs η for volume

TWMR

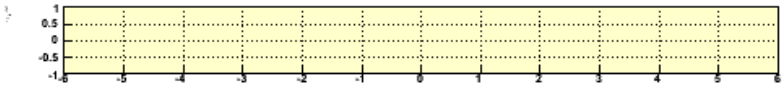



Material budget vs η for volume TWMR

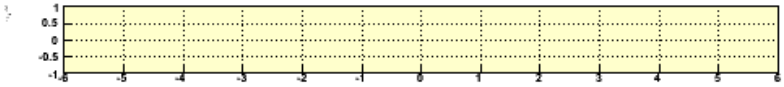



Radiation length differential vs η for volume

TC21

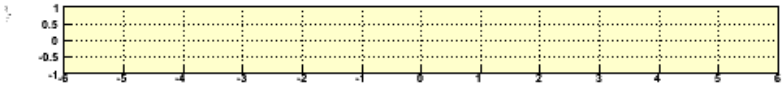


Material budget vs η for volume TC21

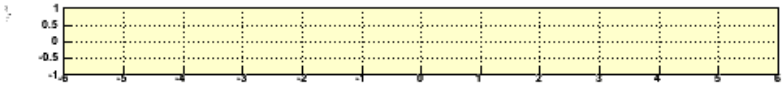


Radiation length differential vs η for volume

TC22

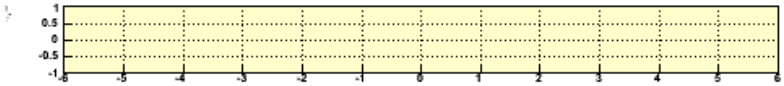


Material budget vs η for volume TC22

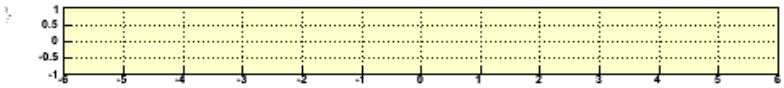


Radiation length differential vs η for volume

TC23

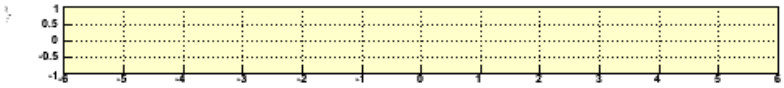


Material budget vs η for volume TC23

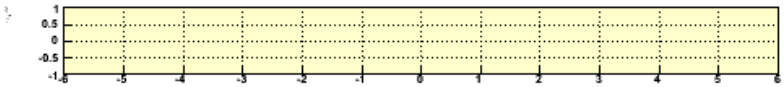


Radiation length differential vs η for volume

TC24



Material budget vs η for volume TC24

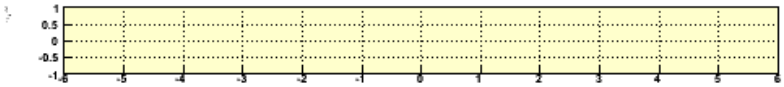


Radiation length differential vs η for volume

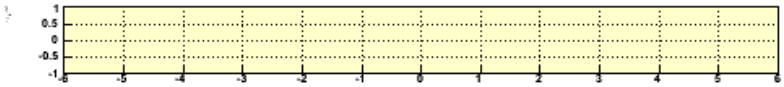
# 92 Validation Summary: Detector TPCE in Geometry y2011

TC25

Material budget vs η for volume TC25

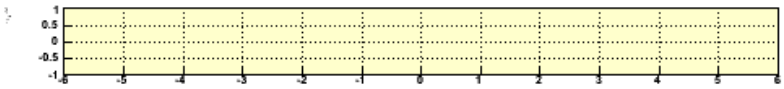


Radiation length differential vs η for volume

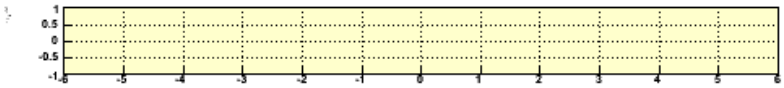


TC26

Material budget vs η for volume TC26

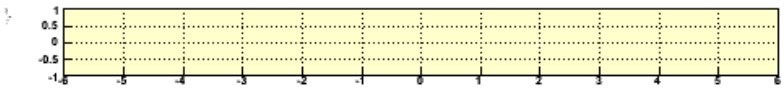


Radiation length differential vs η for volume

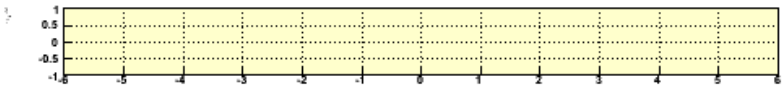


TC27

Material budget vs η for volume TC27

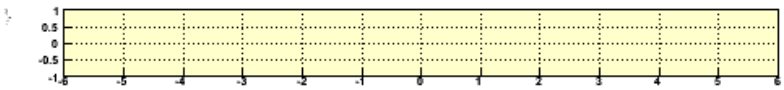


Radiation length differential vs η for volume

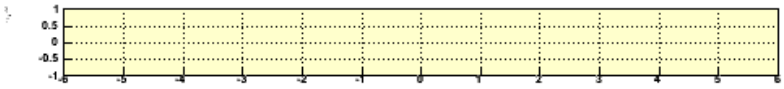


TC28

Material budget vs η for volume TC28

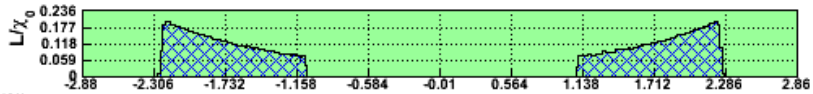


Radiation length differential vs η for volume

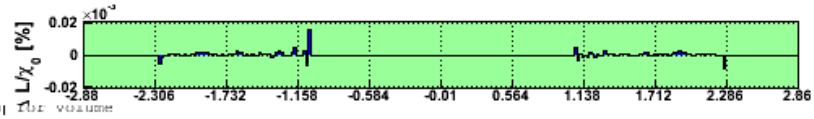


TCAB

Material budget vs η for volume TCAB

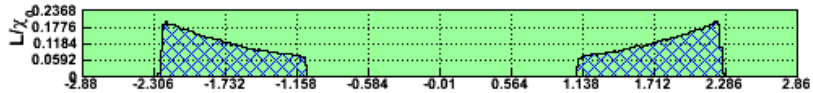



Radiation length differential vs η for volume

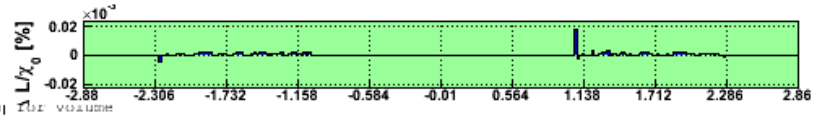



TCA1

Material budget vs η for volume TCA1

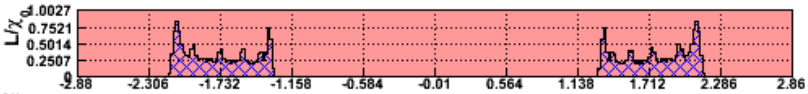



Radiation length differential vs η for volume

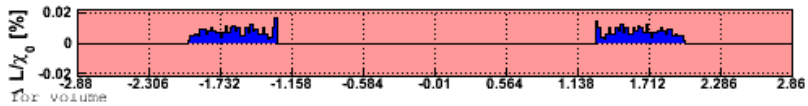


# 93 Validation Summary: Detector TPCE in Geometry y2011

TSAS

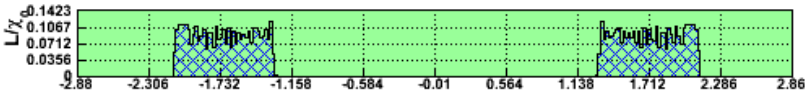



Material budget vs η for volume TSAS

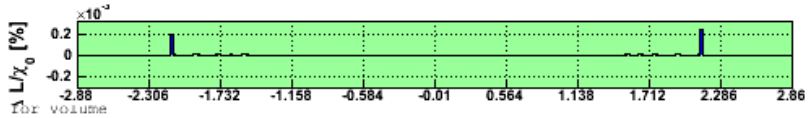



Radiation length differential vs η for volume

TALS

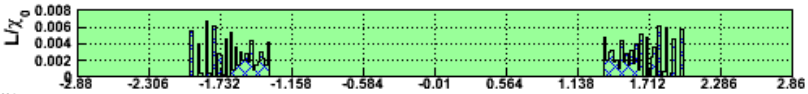



Material budget vs η for volume TALS

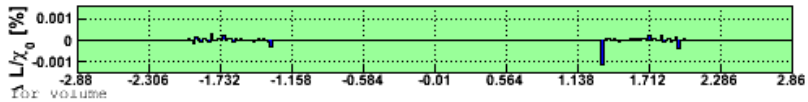



Radiation length differential vs η for volume

THOL

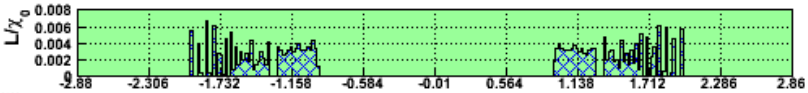



Material budget vs η for volume THOL

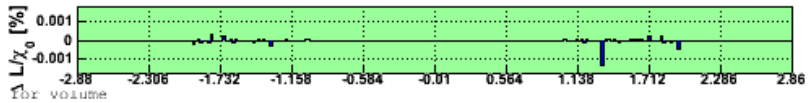



Radiation length differential vs η for volume

FEES

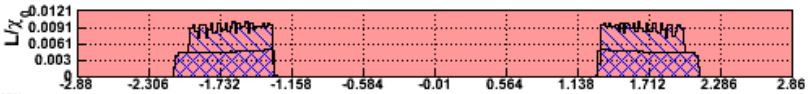



Material budget vs η for volume FEES

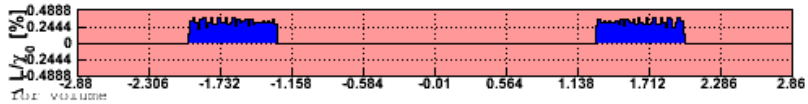



Radiation length differential vs η for volume

TSGT

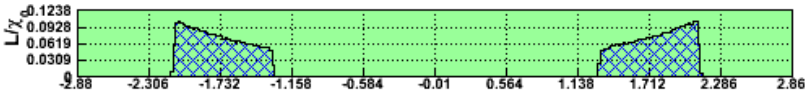



Material budget vs η for volume TSGT

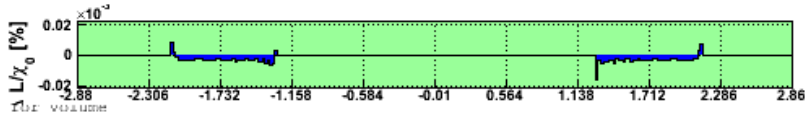



Radiation length differential vs η for volume

TRIB



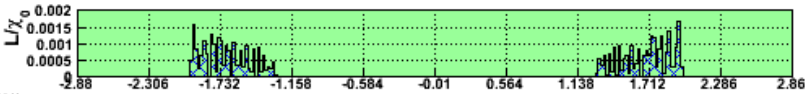

Material budget vs η for volume TRIB



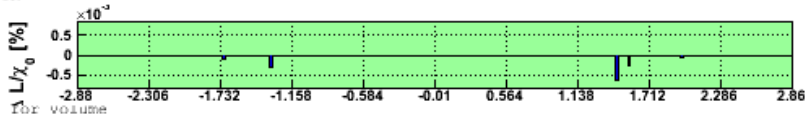

Radiation length differential vs η for volume

# 94 Validation Summary: Detector TPCE in Geometry y2011

TWIR

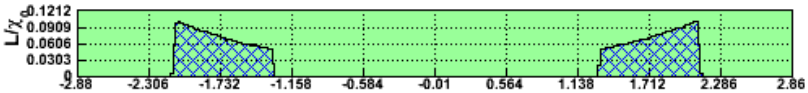



Material budget vs η for volume TWIR

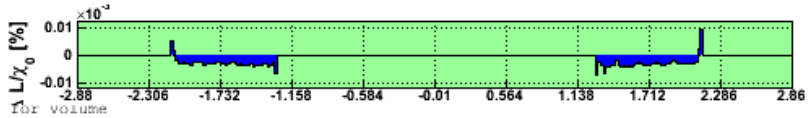



Radiation length differential vs η for volume

TRI1

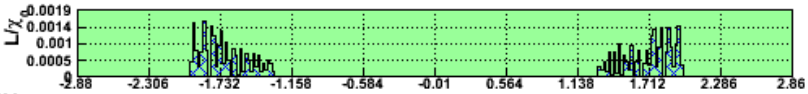



Material budget vs η for volume TRI1

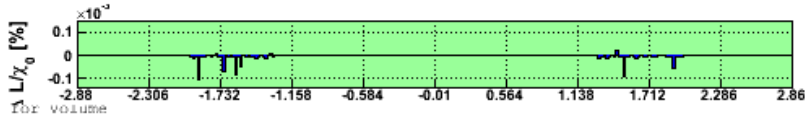



Radiation length differential vs η for volume

TWI1

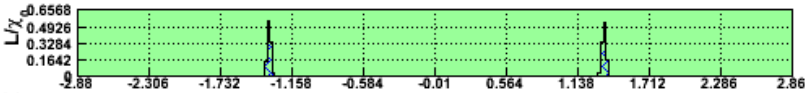



Material budget vs η for volume TWI1

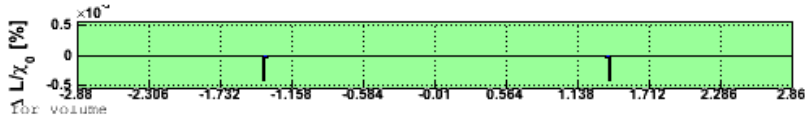



Radiation length differential vs η for volume

TRI2

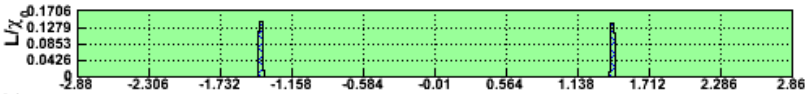



Material budget vs η for volume TRI2

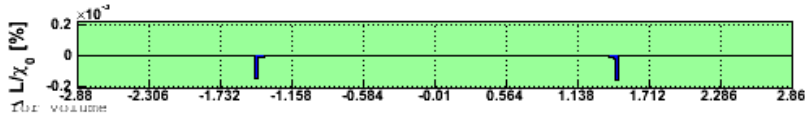



Radiation length differential vs η for volume

TRI3

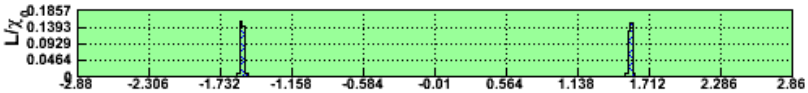



Material budget vs η for volume TRI3

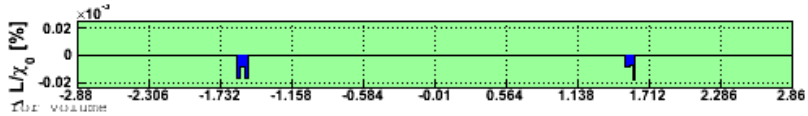



Radiation length differential vs η for volume

TRI4



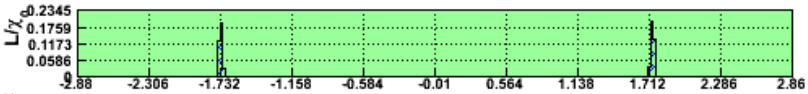

Material budget vs η for volume TRI4



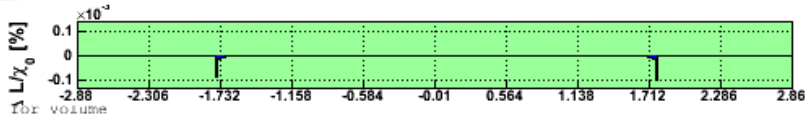

Radiation length differential vs η for volume

# 95 Validation Summary: Detector TPCE in Geometry y2011

TRI5

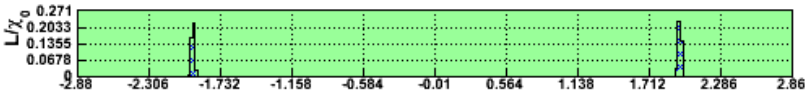



Material budget vs η for volume TRI5

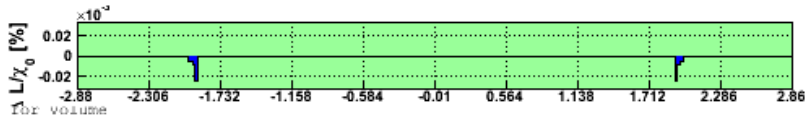



Radiation length differential vs η for volume

TRI6

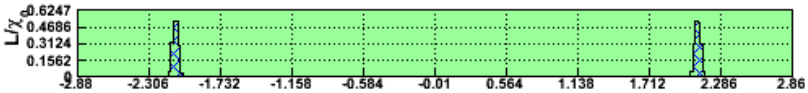



Material budget vs η for volume TRI6

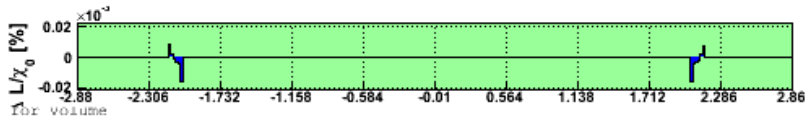



Radiation length differential vs η for volume

TRI7

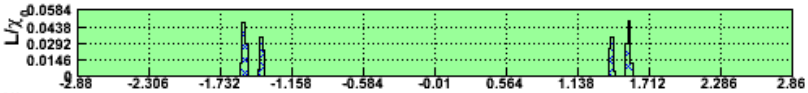



Material budget vs η for volume TRI7

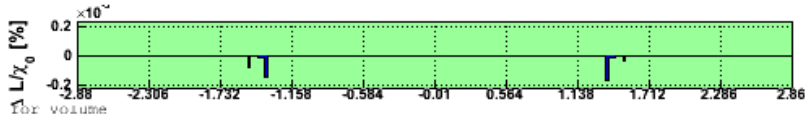



Radiation length differential vs η for volume

TRI8

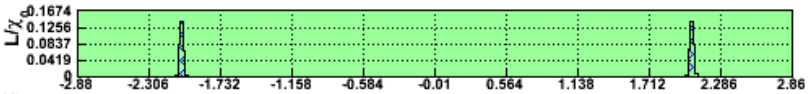



Material budget vs η for volume TRI8

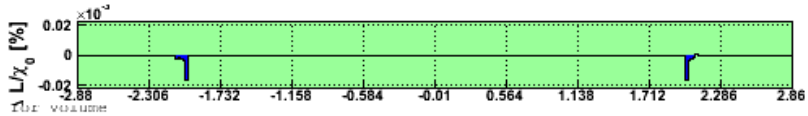



Radiation length differential vs η for volume

TRI9

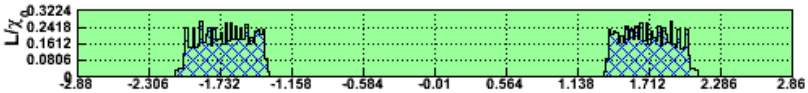



Material budget vs η for volume TRI9

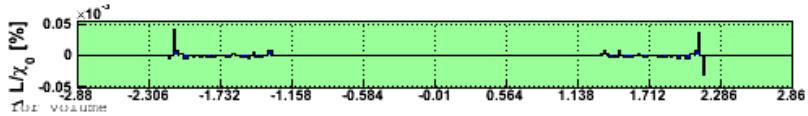



Radiation length differential vs η for volume

TWAS



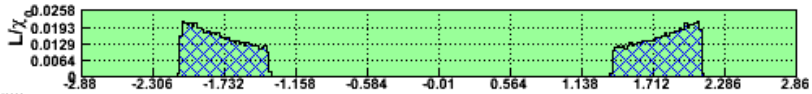

Material budget vs η for volume TWAS



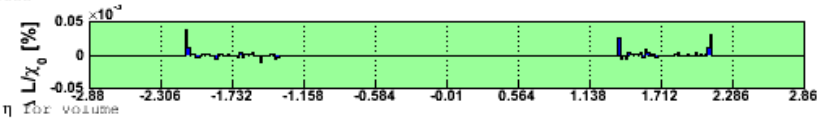

Radiation length differential vs η for volume

# 96 Validation Summary: Detector TPCE in Geometry y2011

TCOO

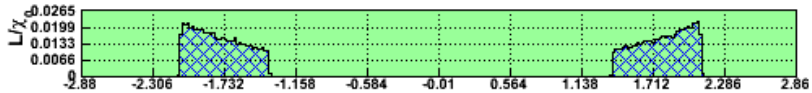



Material budget vs η for volume TCOO

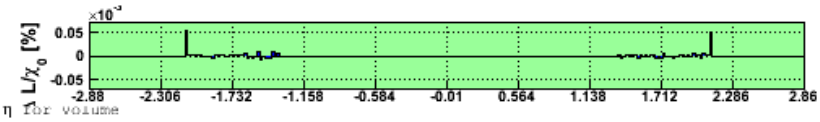



Radiation length differential vs η for volume

TCO1

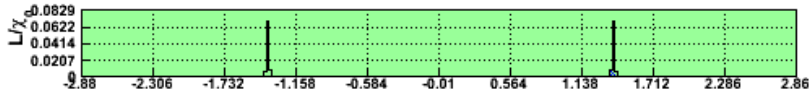



Material budget vs η for volume TCO1

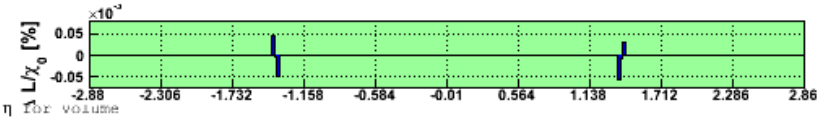



Radiation length differential vs η for volume

TCO2

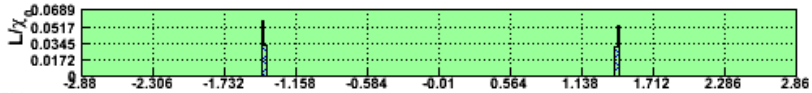



Material budget vs η for volume TCO2

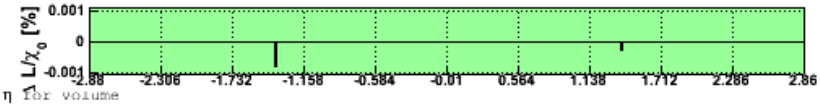



Radiation length differential vs η for volume

TCO3

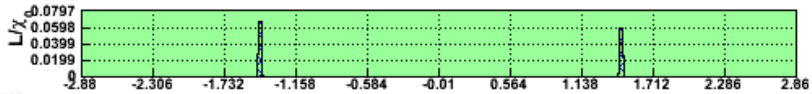



Material budget vs η for volume TCO3

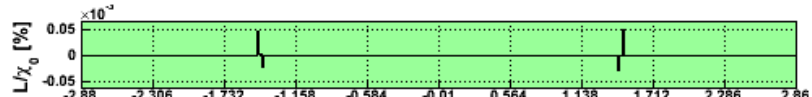



Radiation length differential vs η for volume

TCO4

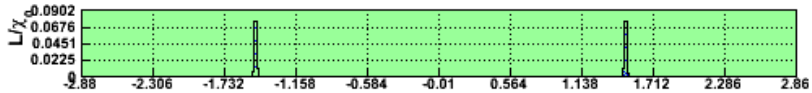



Material budget vs η for volume TCO4

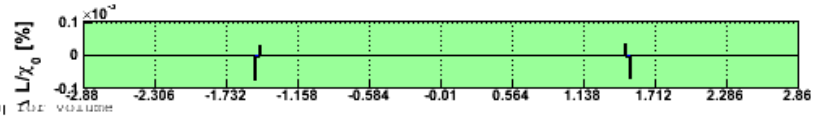



Radiation length differential vs η for volume

TCO5



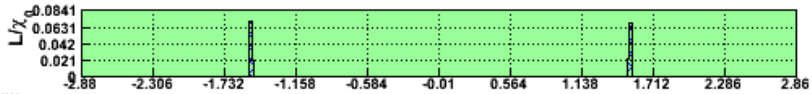

Material budget vs η for volume TCO5



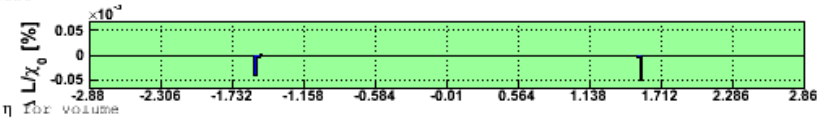

Radiation length differential vs η for volume

# 97 Validation Summary: Detector TPCE in Geometry y2011

TCO6

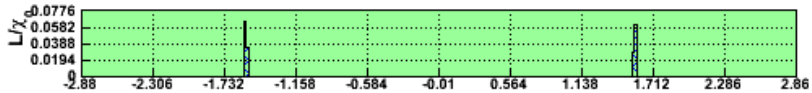



Material budget vs η for volume TCO6

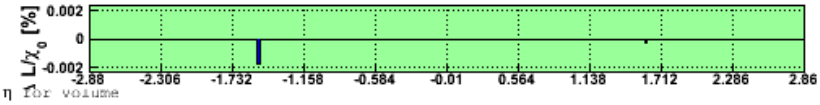



Radiation length differential vs η for volume

TCO7

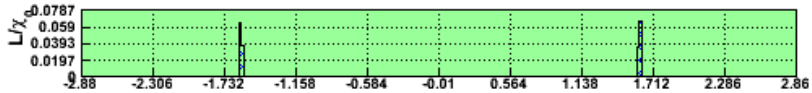



Material budget vs η for volume TCO7

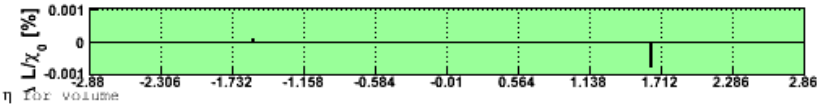



Radiation length differential vs η for volume

TCO8

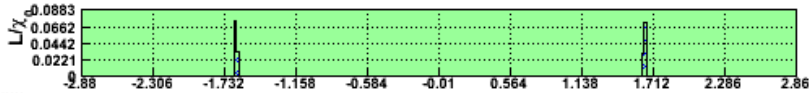



Material budget vs η for volume TCO8

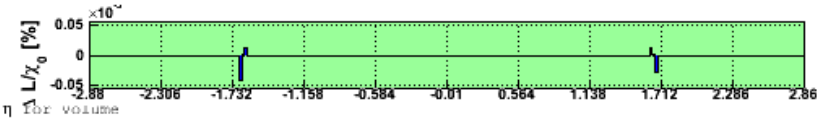



Radiation length differential vs η for volume

TCO9

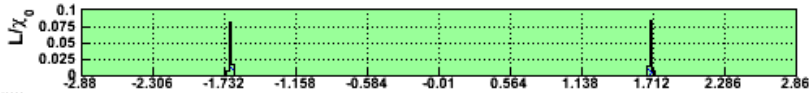



Material budget vs η for volume TCO9

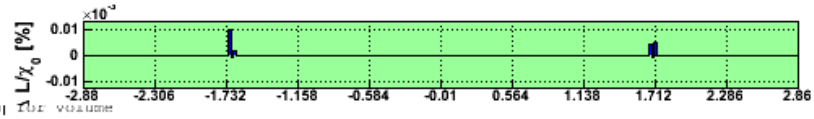



Radiation length differential vs η for volume

TCO0

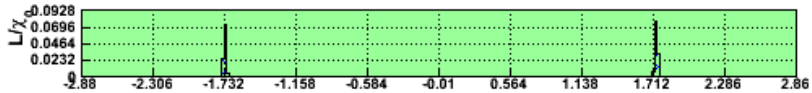



Material budget vs η for volume TCO0

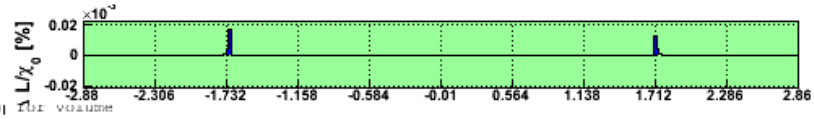



Radiation length differential vs η for volume

TCOa



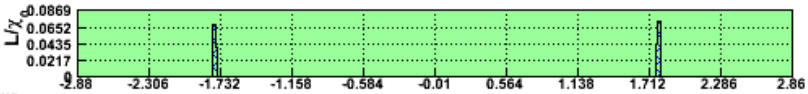

Material budget vs η for volume TCOa



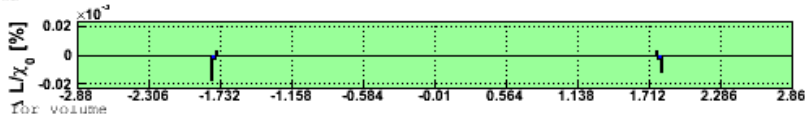

Radiation length differential vs η for volume

# 98 Validation Summary: Detector TPCE in Geometry y2011

TCOb

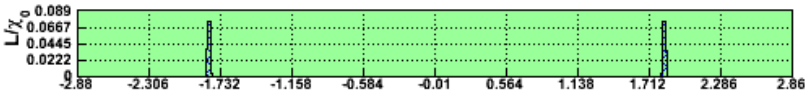



Material budget vs η for volume TCOb

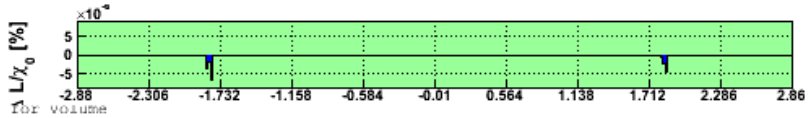



Radiation length differential vs η for volume

TCOc

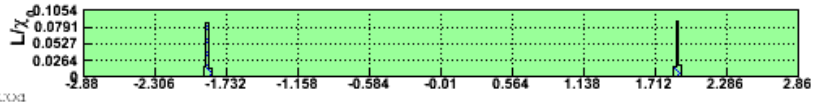



Material budget vs η for volume TCOc

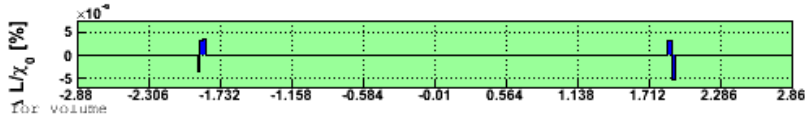



Radiation length differential vs η for volume

TCOd

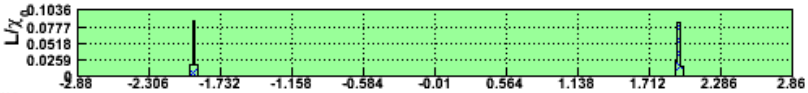



Material budget vs η for volume TCOd

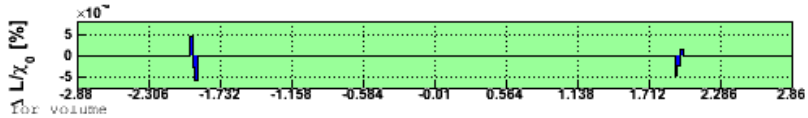



Radiation length differential vs η for volume

TCOe

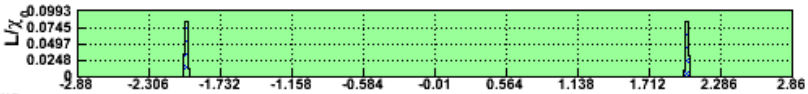



Material budget vs η for volume TCOe

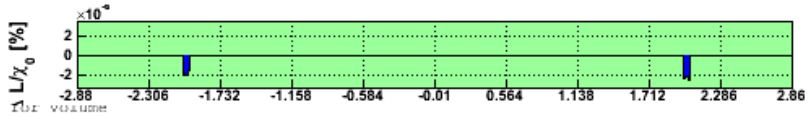



Radiation length differential vs η for volume

TCOf

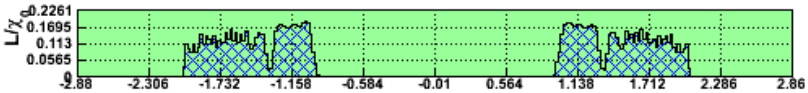



Material budget vs η for volume TCOf

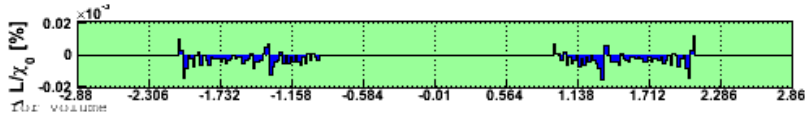



Radiation length differential vs η for volume

FEEA



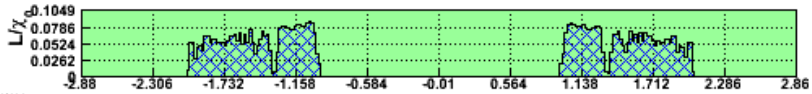

Material budget vs η for volume FEEA



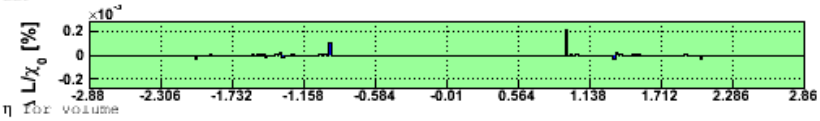

Radiation length differential vs η for volume

# 99 Validation Summary: Detector TPCE in Geometry y2011

FEEP

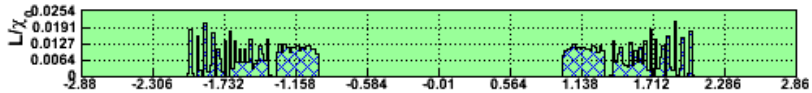



Material budget vs η for volume FEEP

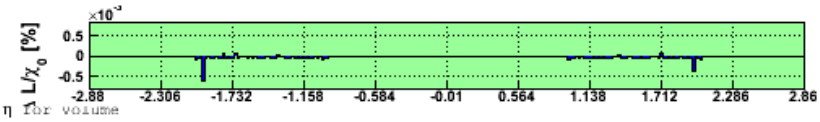



Radiation length differential vs η for volume

FEER

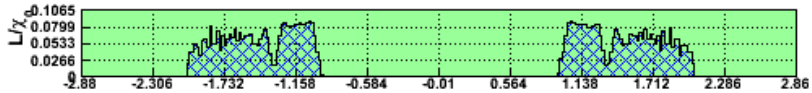



Material budget vs η for volume FEER

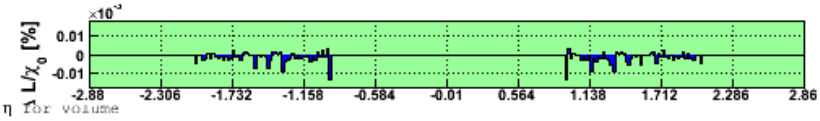



Radiation length differential vs η for volume

FEEI

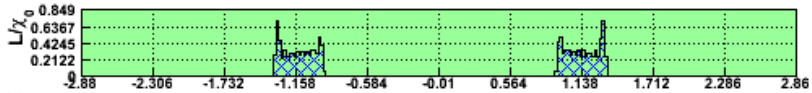



Material budget vs η for volume FEEI

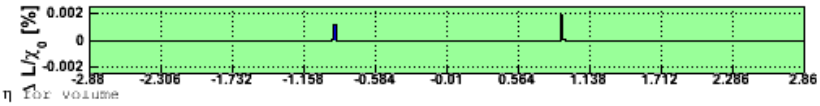



Radiation length differential vs η for volume

TSA1

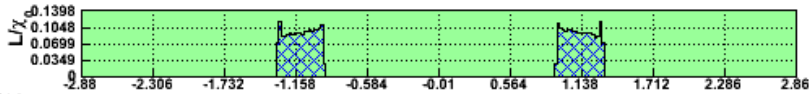



Material budget vs η for volume TSA1

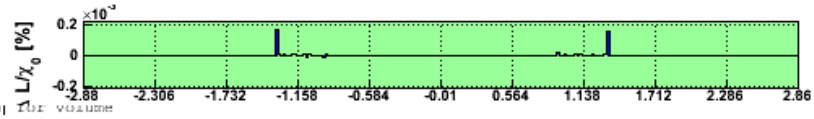



Radiation length differential vs η for volume

TAL1

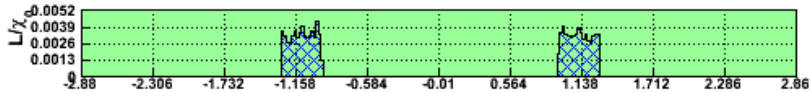



Material budget vs η for volume TAL1

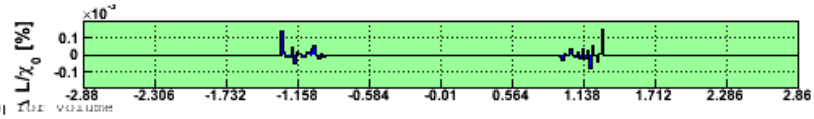



Radiation length differential vs η for volume

THO1



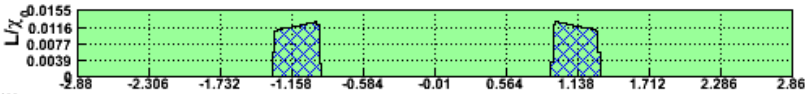

Material budget vs η for volume THO1



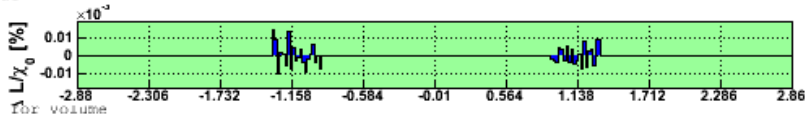

Radiation length differential vs η for volume

# 100 Validation Summary: Detector TPCE in Geometry y2011

TSG1

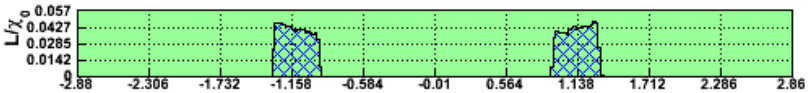



Material budget vs η for volume TSG1

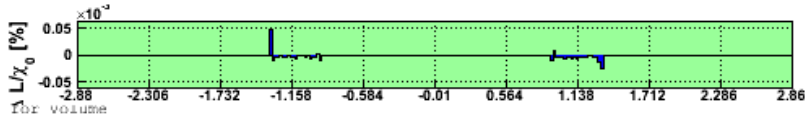



Radiation length differential vs η for volume

TRI0

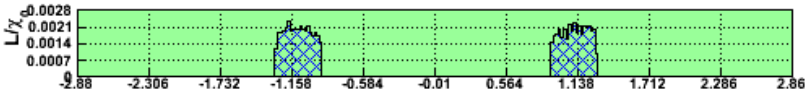



Material budget vs η for volume TRI0

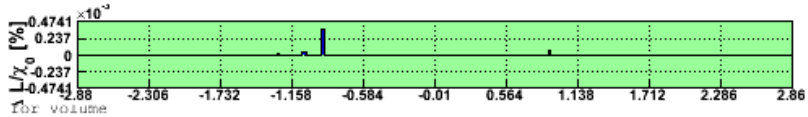



Radiation length differential vs η for volume

TWI2

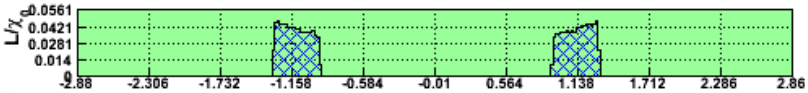



Material budget vs η for volume TWI2

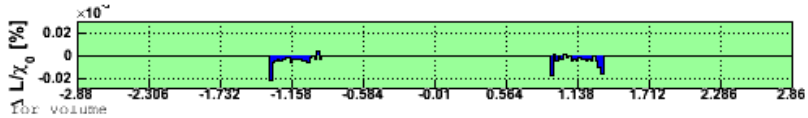



Radiation length differential vs η for volume

TRIa

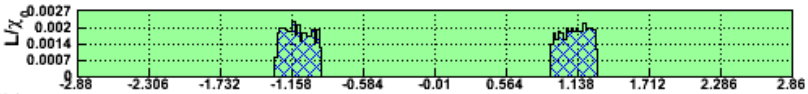



Material budget vs η for volume TRIa

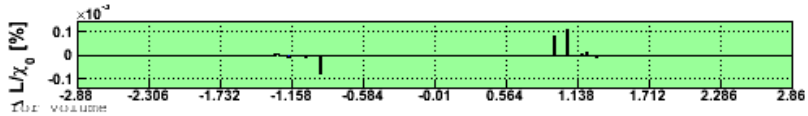



Radiation length differential vs η for volume

TWI3

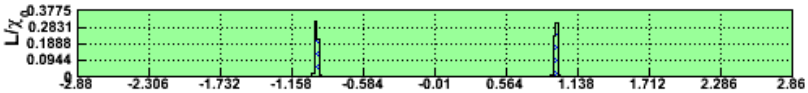



Material budget vs η for volume TWI3

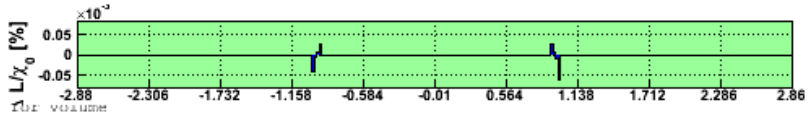



Radiation length differential vs η for volume

TRIb



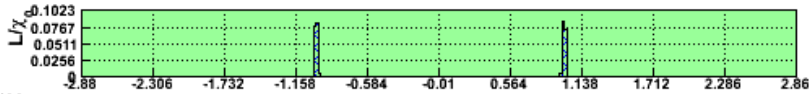

Material budget vs η for volume TRIb



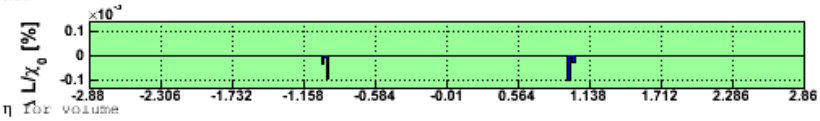

Radiation length differential vs η for volume

# 101 Validation Summary: Detector TPCE in Geometry y2011

TRIc

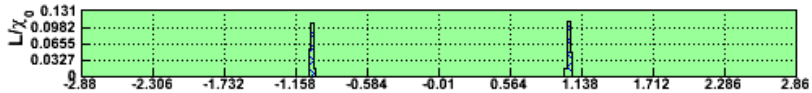



Material budget vs η for volume TRIc

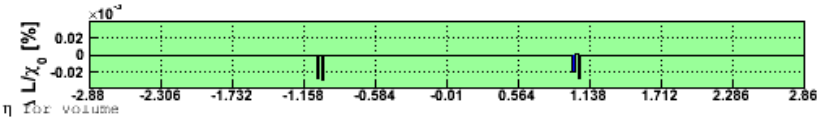



Radiation length differential vs η for volume

TRId

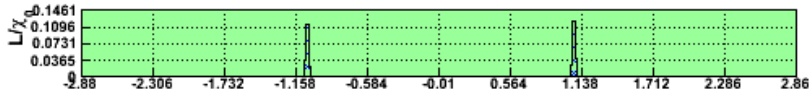



Material budget vs η for volume TRId

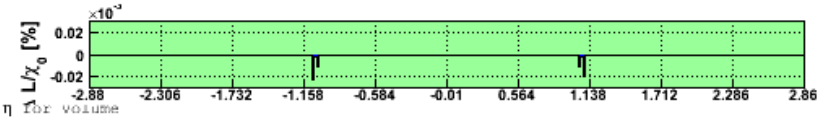



Radiation length differential vs η for volume

TRIe

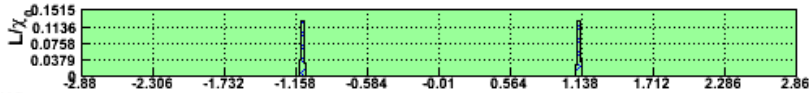



Material budget vs η for volume TRIe

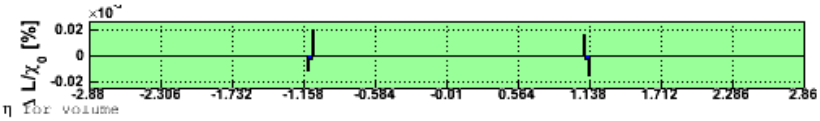



Radiation length differential vs η for volume

TRIf

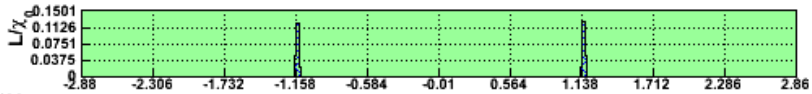



Material budget vs η for volume TRIf

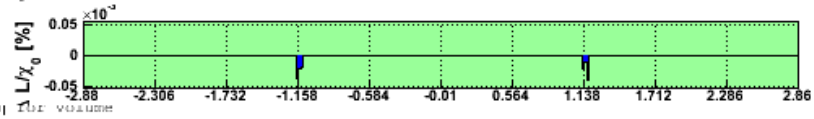



Radiation length differential vs η for volume

TRIg

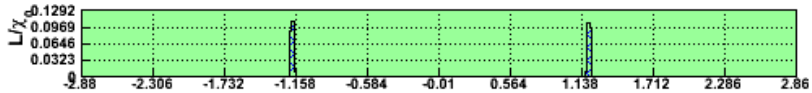



Material budget vs η for volume TRIg

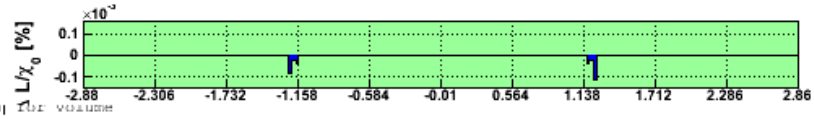



Radiation length differential vs η for volume

TRIh



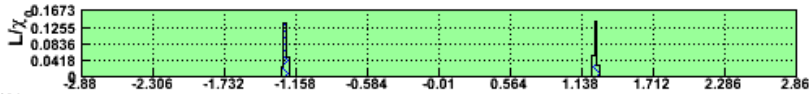

Material budget vs η for volume TRIh



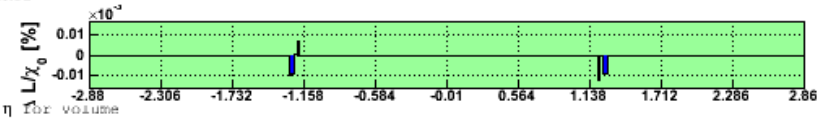

Radiation length differential vs η for volume

# 102 Validation Summary: Detector TPCE in Geometry y2011

TRIi

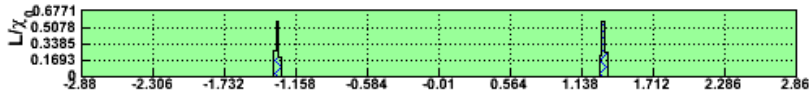



Material budget vs η for volume TRIi

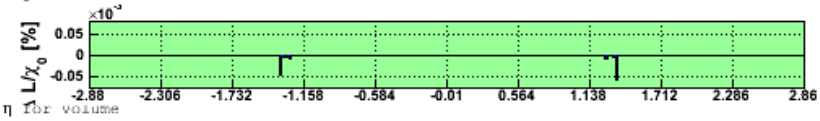



Radiation length differential vs η for volume

TRIj

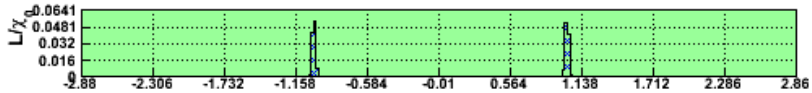



Material budget vs η for volume TRIj

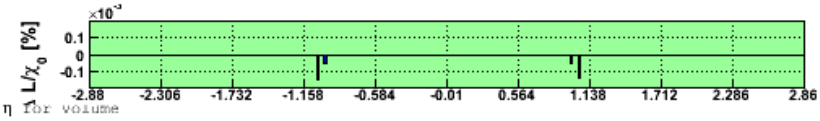



Radiation length differential vs η for volume

TRIk

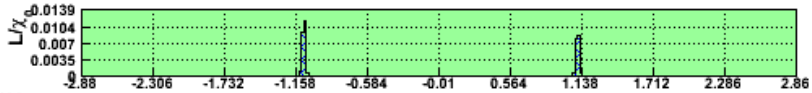



Material budget vs η for volume TRIk

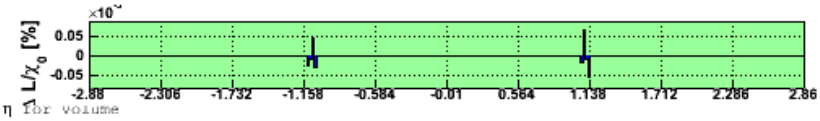



Radiation length differential vs η for volume

TRIl

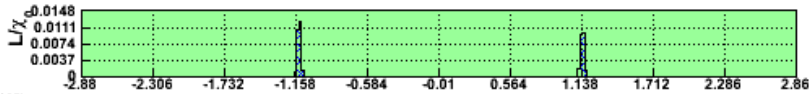



Material budget vs η for volume TRIl

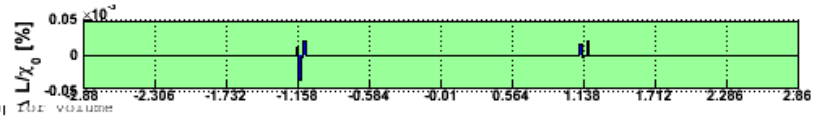



Radiation length differential vs η for volume

TRIm

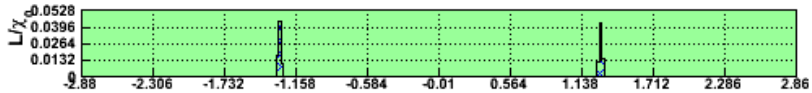



Material budget vs η for volume TRIm

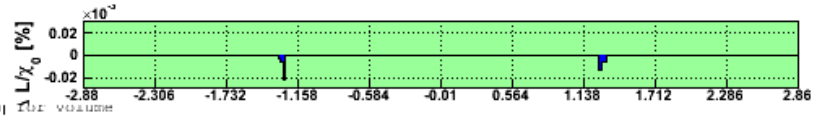



Radiation length differential vs η for volume

TRIn



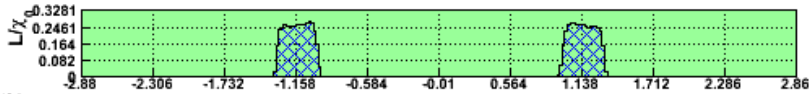

Material budget vs η for volume TRIn



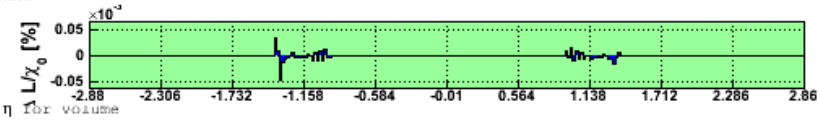

Radiation length differential vs η for volume

# 103 Validation Summary: Detector TPCE in Geometry y2011

TWA1

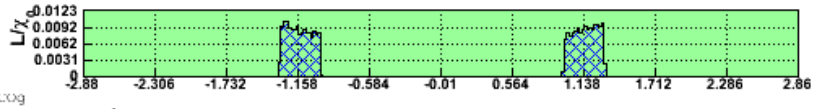



Material budget vs η for volume TWA1

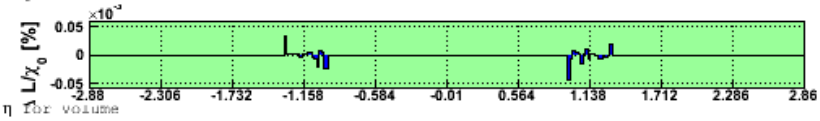



Radiation length differential vs η for volume

TCOg

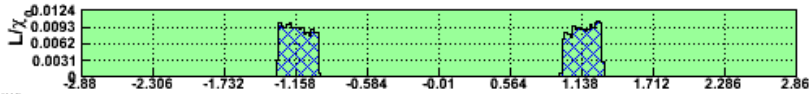



Material budget vs η for volume TCOg

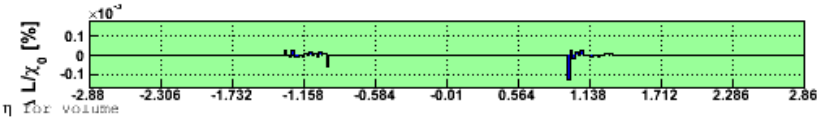



Radiation length differential vs η for volume

TCOh

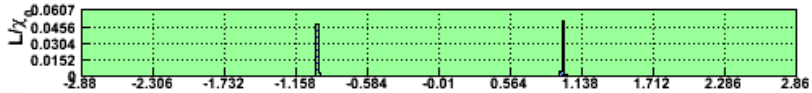



Material budget vs η for volume TCOh

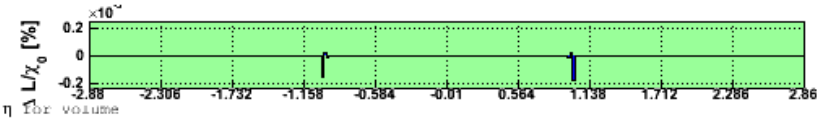



Radiation length differential vs η for volume

TCOi

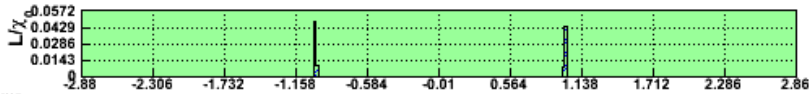



Material budget vs η for volume TCOi

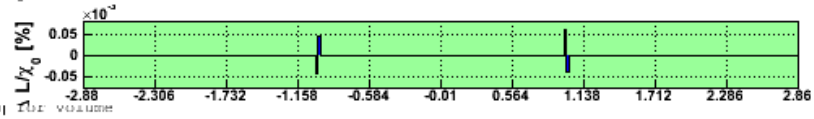



Radiation length differential vs η for volume

TCOj

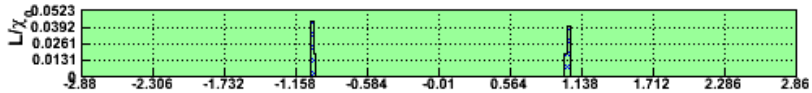



Material budget vs η for volume TCOj

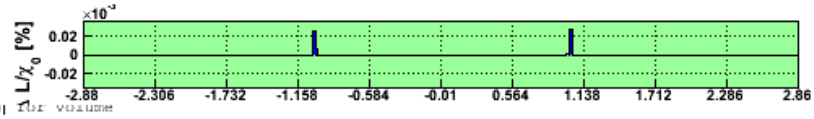



Radiation length differential vs η for volume

TCOk



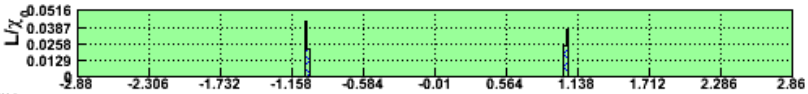

Material budget vs η for volume TCOk



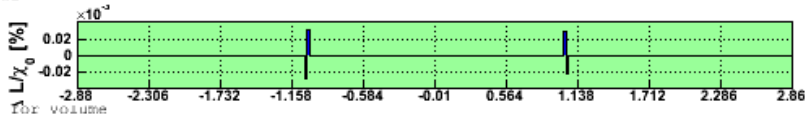

Radiation length differential vs η for volume

# 104 Validation Summary: Detector TPCE in Geometry y2011

TCOl

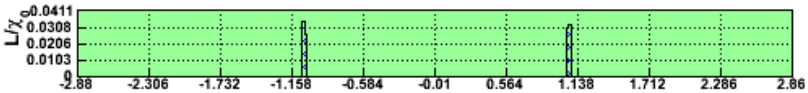



Material budget vs η for volume TCOl

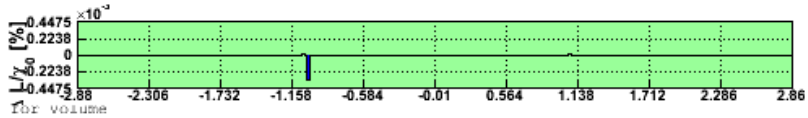



Radiation length differential vs η for volume

TCOm

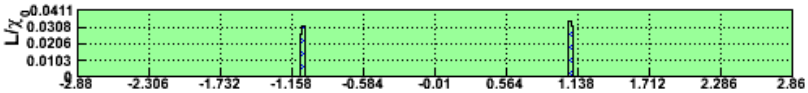



Material budget vs η for volume TCOm

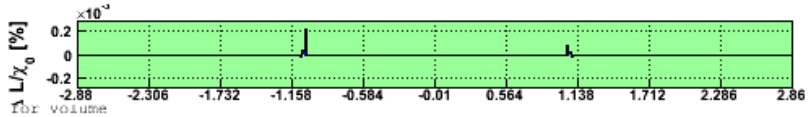



Radiation length differential vs η for volume

TCOn

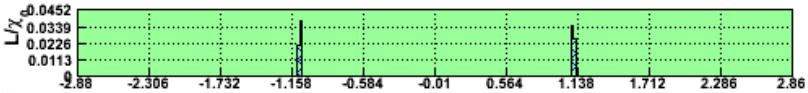



Material budget vs η for volume TCOn

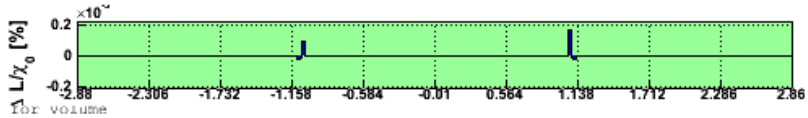



Radiation length differential vs η for volume

TCOo

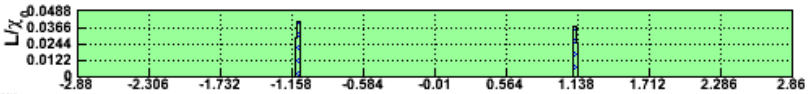



Material budget vs η for volume TCOo

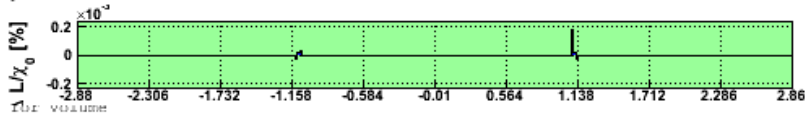



Radiation length differential vs η for volume

TCOp

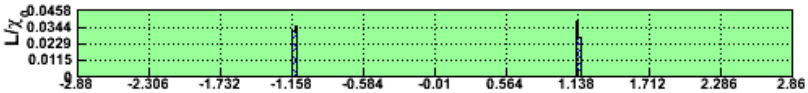



Material budget vs η for volume TCOp

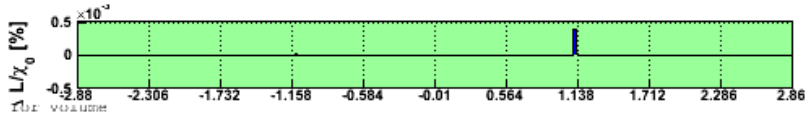



Radiation length differential vs η for volume

TCOq



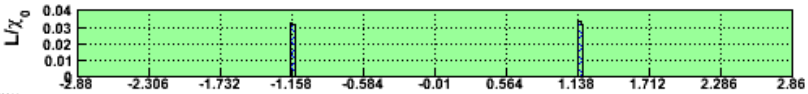

Material budget vs η for volume TCOq



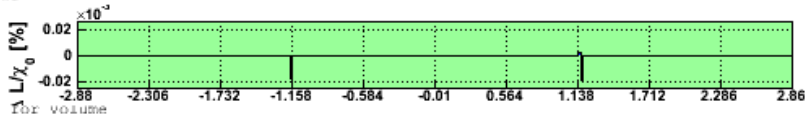

Radiation length differential vs η for volume

# 105 Validation Summary: Detector TPCE in Geometry y2011

TCOr

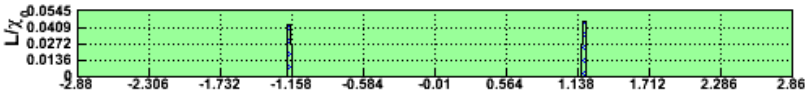



Material budget vs η for volume TCOr

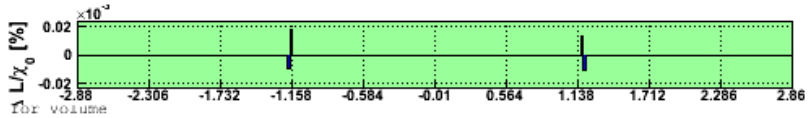



Radiation length differential vs η for volume

TCOs

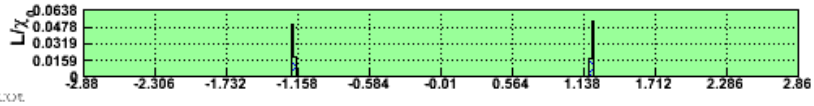



Material budget vs η for volume TCOs

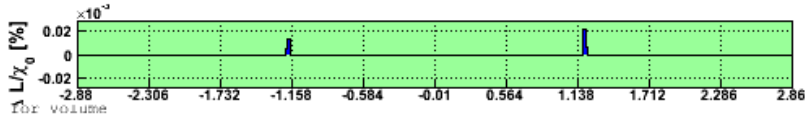



Radiation length differential vs η for volume

TCOt

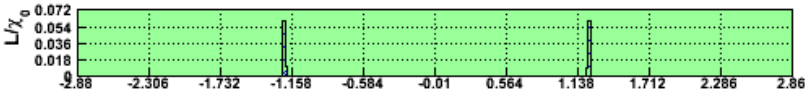



Material budget vs η for volume TCOt

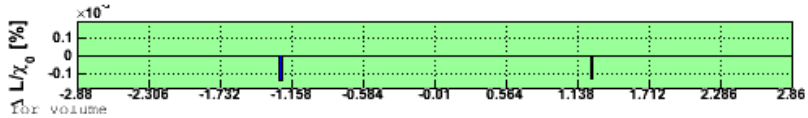



Radiation length differential vs η for volume

TCOu

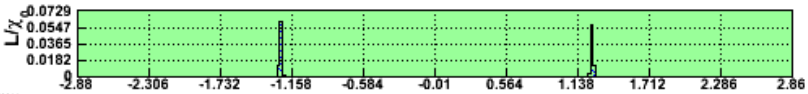



Material budget vs η for volume TCOu

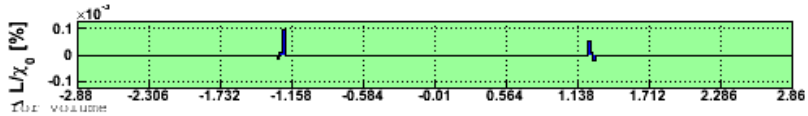



Radiation length differential vs η for volume

TCOv

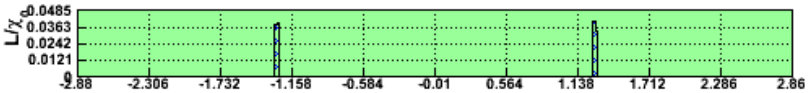



Material budget vs η for volume TCOv

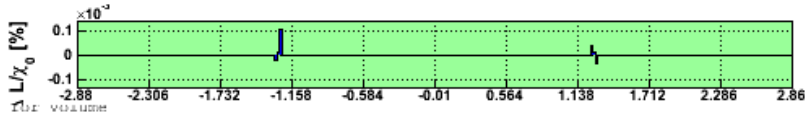



Radiation length differential vs η for volume

TCOw



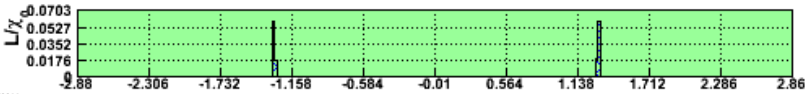

Material budget vs η for volume TCOw



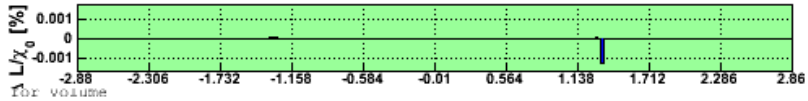

Radiation length differential vs η for volume

# 106 Validation Summary: Detector TPCE in Geometry y2011

TCOx

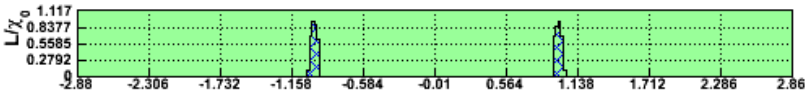



Material budget vs η for volume TCOx

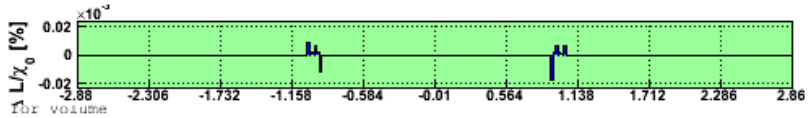



Radiation length differential vs η for volume

TWRI

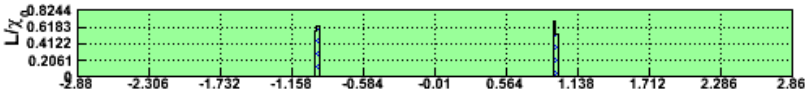



Material budget vs η for volume TWRI

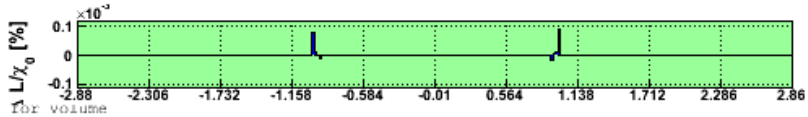



Radiation length differential vs η for volume

TWRC

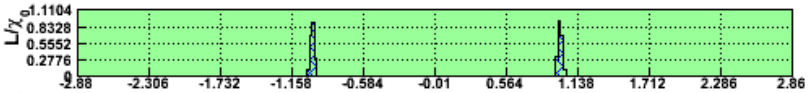



Material budget vs η for volume TWRC

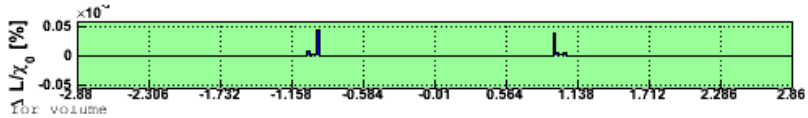



Radiation length differential vs η for volume

TWRG

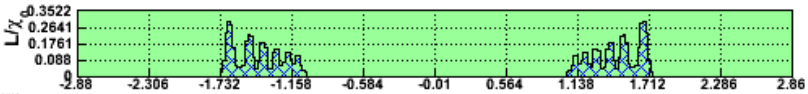



Material budget vs η for volume TWRG

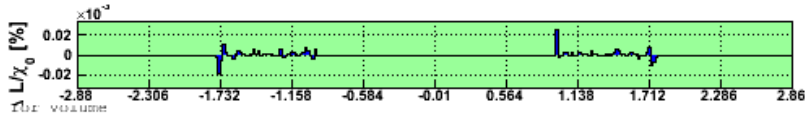



Radiation length differential vs η for volume

TRDO

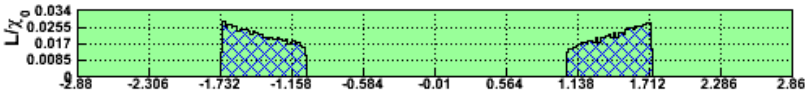



Material budget vs η for volume TRDO

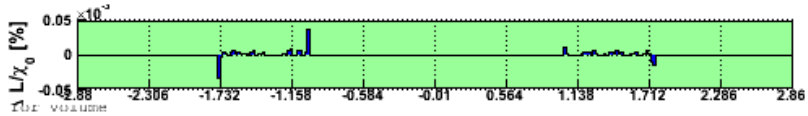



Radiation length differential vs η for volume

TCOy



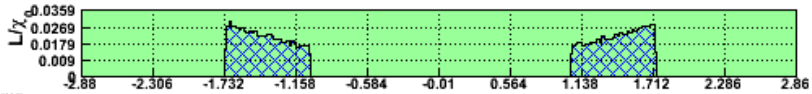

Material budget vs η for volume TCOy



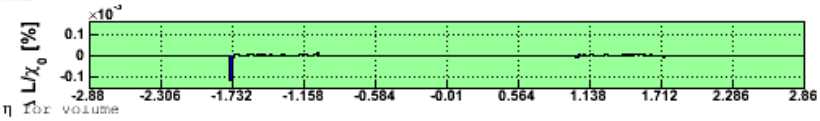

Radiation length differential vs η for volume

# 107 Validation Summary: Detector TPCE in Geometry y2011

TCOz

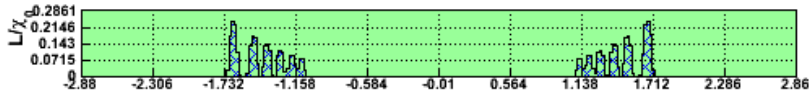



Material budget vs η for volume TCOz

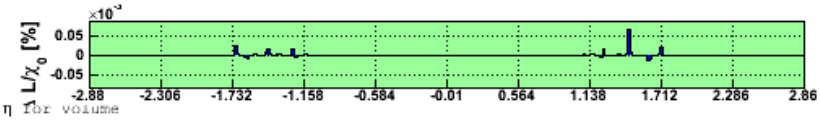



Radiation length differential vs η for volume

TRDC

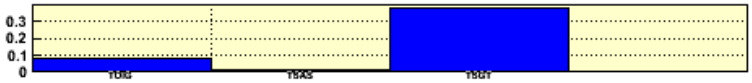



Material budget vs η for volume TRDC




Radiation length differential vs η for volume

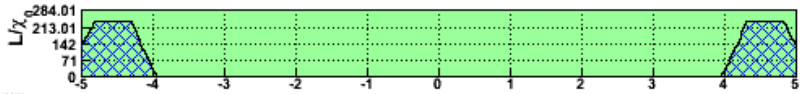
SUMMARY



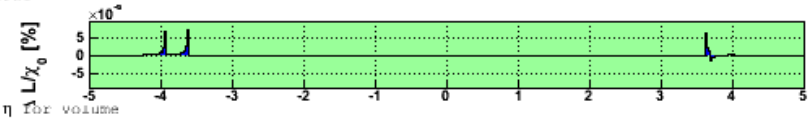

Summary of volumes above 0.5 * threshold

# 108 Validation Summary: Detector UPST in Geometry y2011

UPST

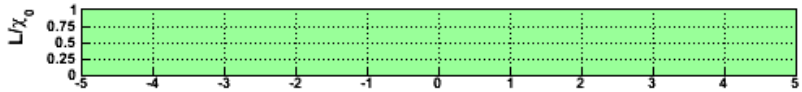



Material budget vs η for volume UPST

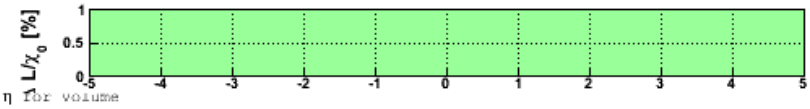



Radiation length differential vs η for volume

PUPD

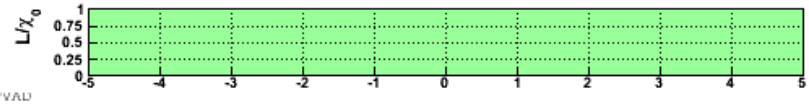



Material budget vs η for volume PUPD

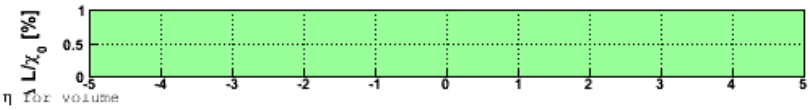



Radiation length differential vs η for volume

PVAD

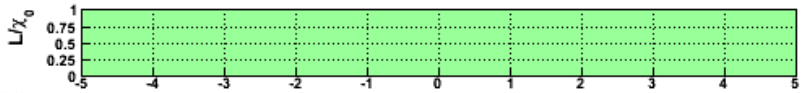



Material budget vs η for volume PVAD

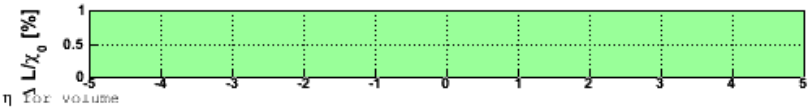



Radiation length differential vs η for volume

PUPE

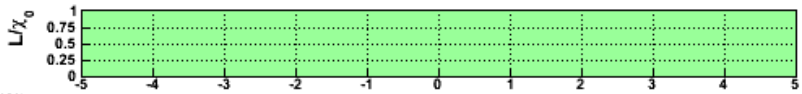



Material budget vs η for volume PUPE

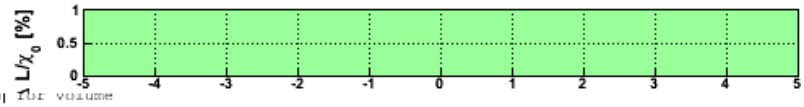



Radiation length differential vs η for volume

PVAE

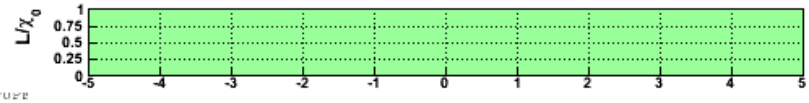



Material budget vs η for volume PVAE

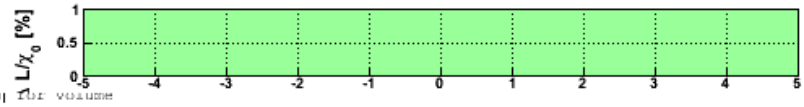



Radiation length differential vs η for volume

PUPF

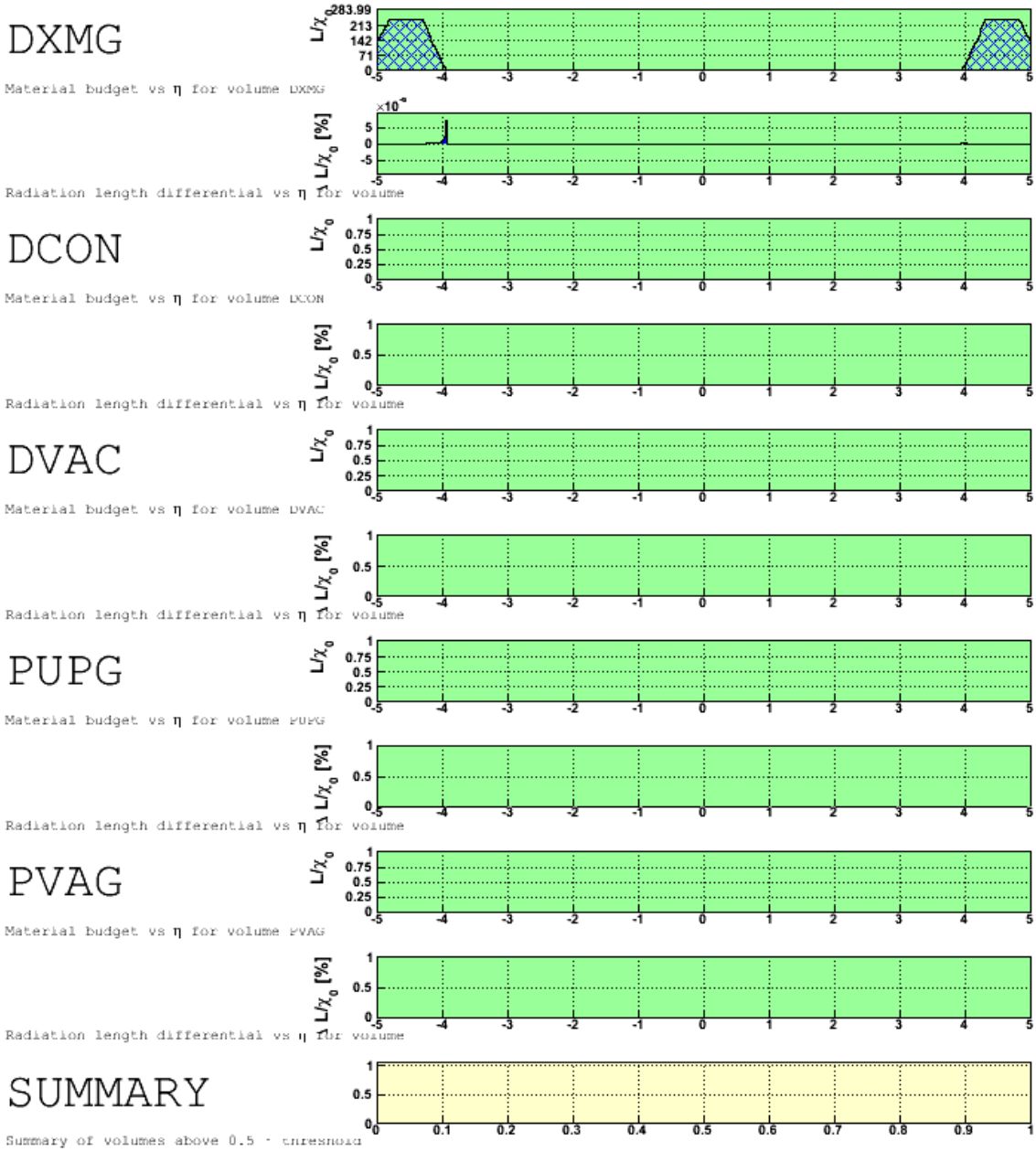



Material budget vs η for volume PUPF

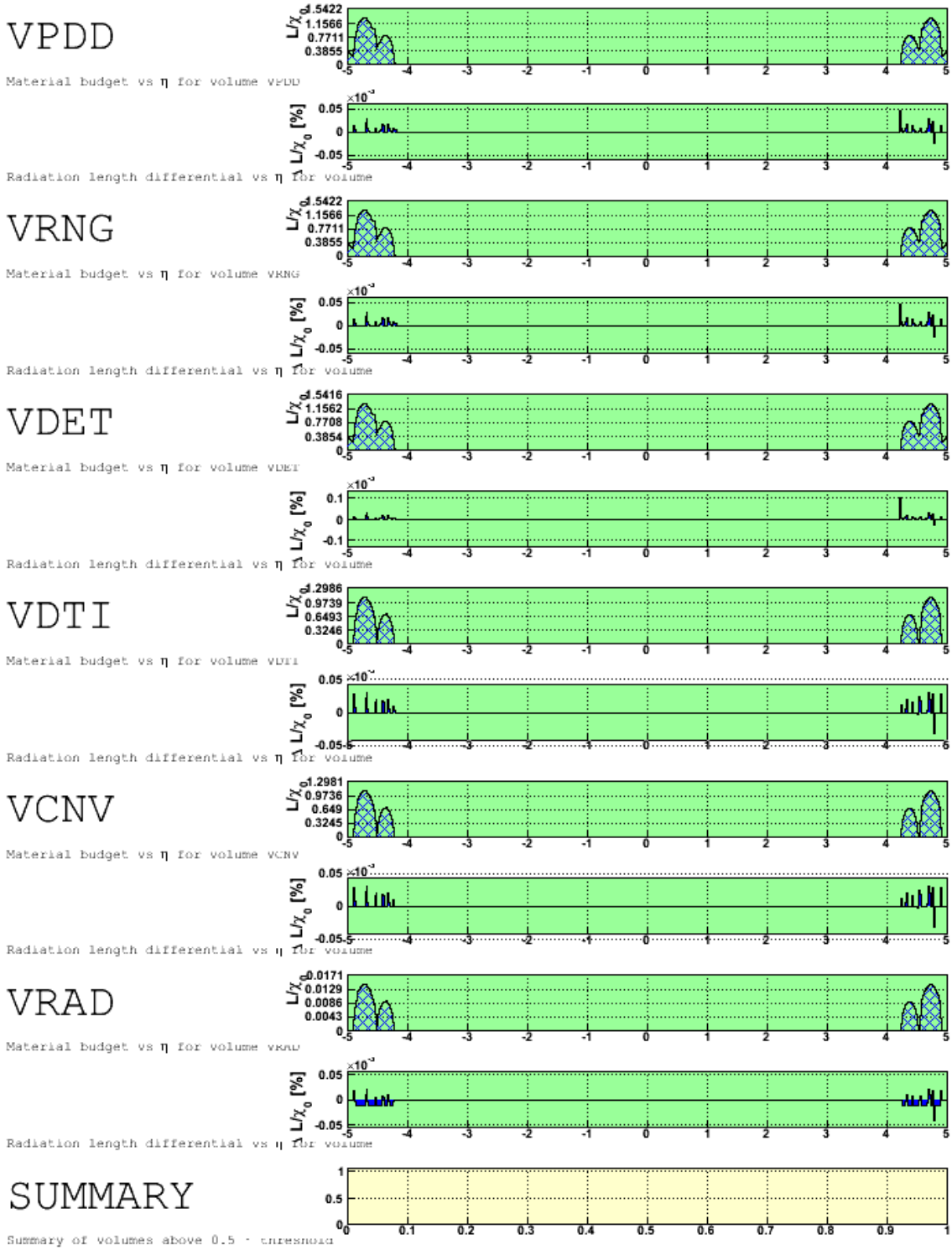



Radiation length differential vs η for volume

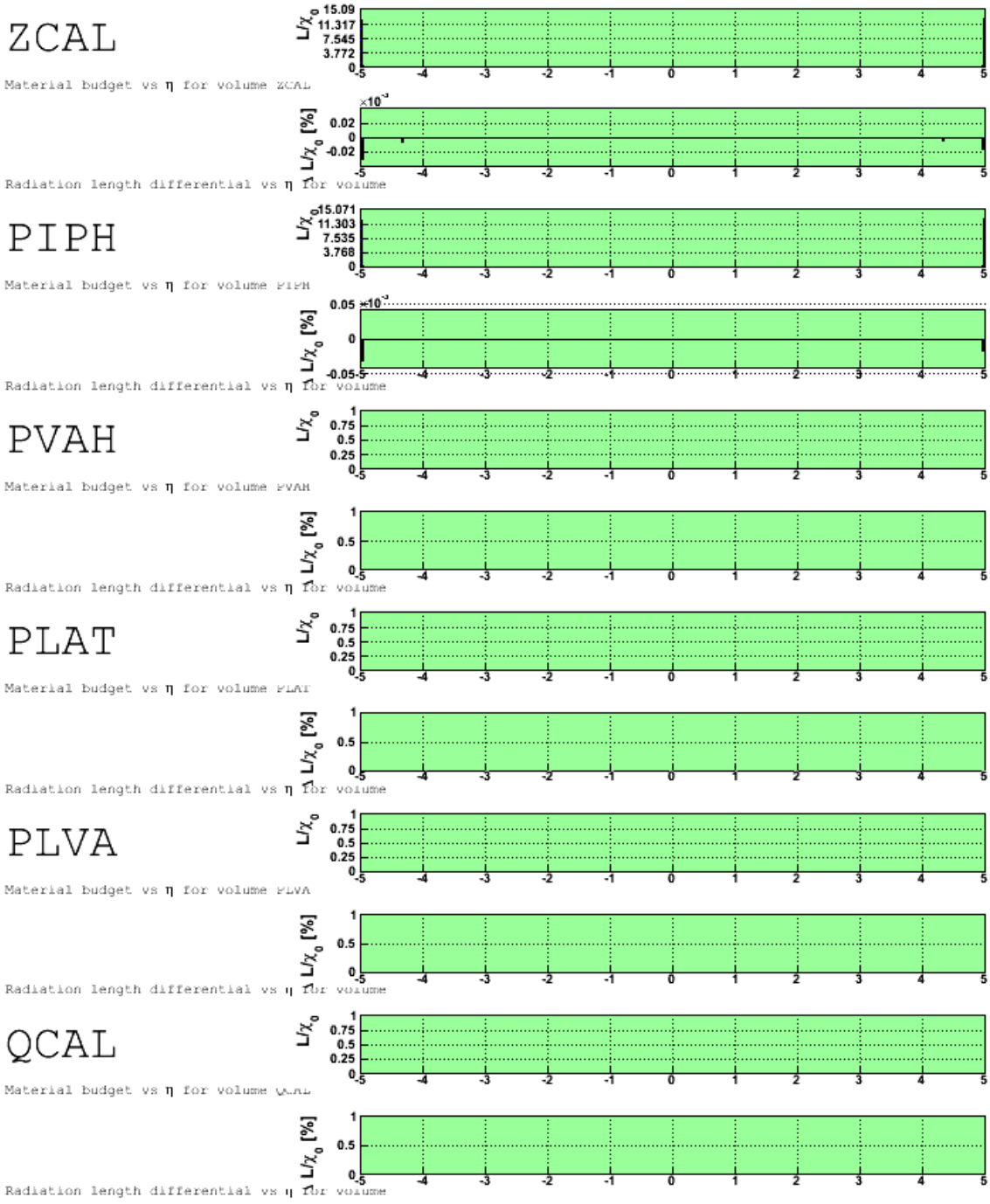
# 109 Validation Summary: Detector UPST in Geometry y2011



# 110 Validation Summary: Detector VPDD in Geometry y2011

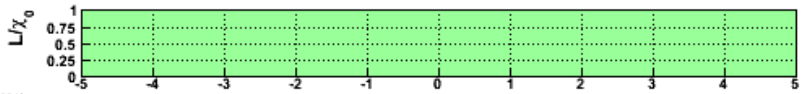


# 111 Validation Summary: Detector ZCAL in Geometry y2011

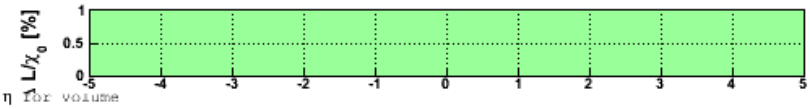


# 112 Validation Summary: Detector ZCAL in Geometry y2011

QDIV

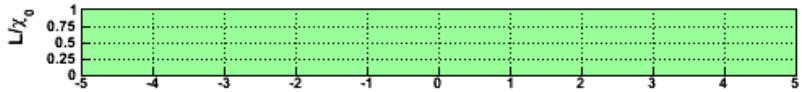



Material budget vs η for volume QDIV

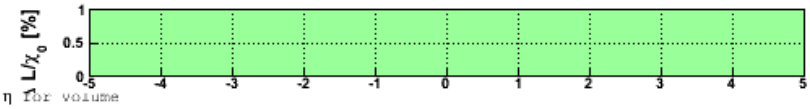



Radiation length differential vs η for volume

QSCI

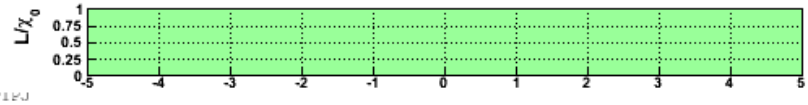



Material budget vs η for volume QSCI

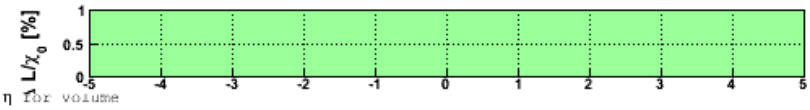



Radiation length differential vs η for volume

PIPJ

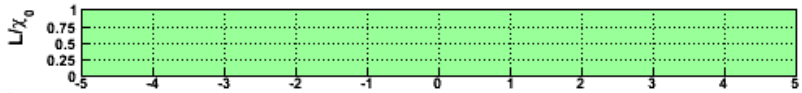



Material budget vs η for volume PIPJ

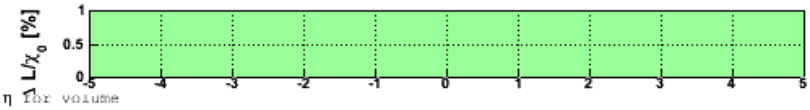



Radiation length differential vs η for volume

PVAJ

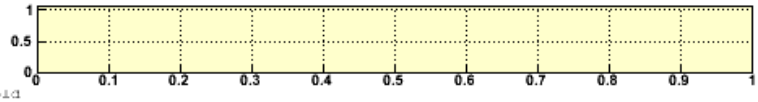



Material budget vs η for volume PVAJ




Radiation length differential vs η for volume

SUMMARY




Summary of volumes above 0.5 * threshold