# StMiniMcEvent

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# (Hopefully brief!) Outline

- Why StMiniMcEvent?
- What is StMiniMcEvent?
- What has it been used for in analysis?
- Are there other potential uses for it?

# So what is it? Qu'est-ce que c'est ce truc?

- **Situation:**
  - **StAssociationMaker is very general by design**
    - *It has to be useful for pretty much everyone!*
  - **A general spectra analysis needs several corrections, chiefly efficiency**
  - **Run several packages every time we change cuts:**
    - *StEvent + StMcEvent + StAssociationMaker + (something to calculate your corrections)*
- **General lament: "Wouldn't it be nice to store some of the information persistently?"**
- **Bum Choi actually took this on, I'm just the guy heckling over his shoulder…**

# Sounds good…

- **Advantages**
  - **No need to rerun so many packages…**
  - **StAssociationMaker needs MC and reco hits**
    - *Save lots of disk space!*

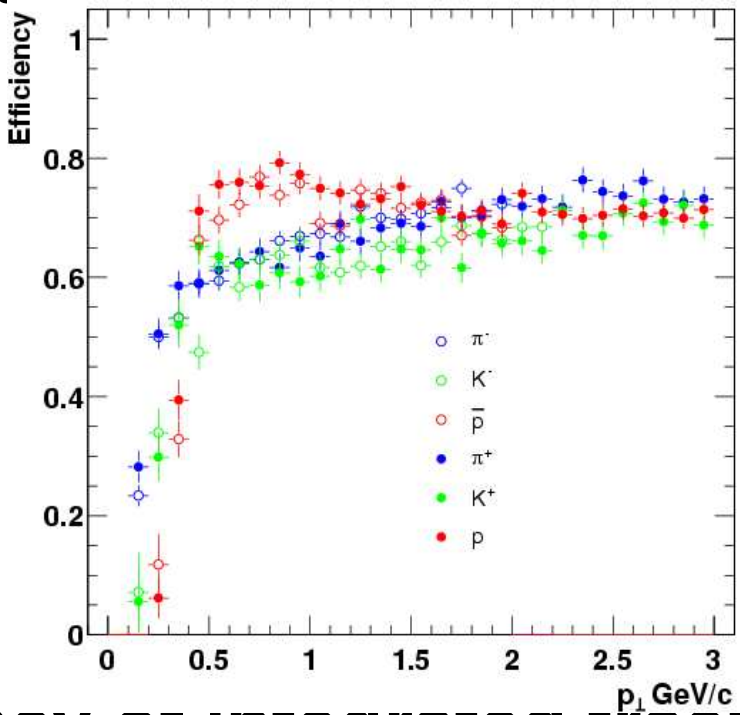
- **Current status (tuned for single particle spectra, primaries):**
  - **Embedding data**
    - *acceptance, efficiency, momentum resolution corrections*
  - **Full simulation events (e.g. Hijing)**
    - *Above + background, merging, splitting, ghost tracks*

# Implementation

- Like most root TTrees, has several TClonesArrays
- Branch to hold all MC Information
  - Can look at all the information of the input event
    - *Acceptance is calculated from this branch*
- Branch to hold Matched information
  - Pair-wise (MC⇔reco) information
    - *Efficiency, momentum resolution*
- In full simulation:
    - *Background contamination branch*
    - *Split track branch*
    - *Merged track branch*
    - *Ghost track branch*

# What has it been used for?

- So far, mainly spectra analysis
  - Efficiency, acceptance, etc. corrections used in h- & high-pt pa




- Testing efficiency of integrated tracker
  - Compare to current tracker on same footing

# Other uses for it?

- **Future: maybe combine with Frank's common MuDst as another branch…**
  - **Case usage (Duncan)**
    - *Study efficiency as a function of other event-wise quantities, e.g. track density in a given region*
  - **Persistent V0 matching?**
  - **FTPC?**
- **Interested parties can look in:**
  - **$STAR/StRoot/StMiniMcMaker/**
  - **$STAR/StRoot/StMiniMcEvent/**
    - *Send comments to Bum or to me.*