Two-Photon Production Rates at RHIC

Final State	$\Gamma_{\gamma\gamma}$ [keV]	Au+Au σ[μb]	Evts./year	I+I σ [μb]	Evts./year
π^0	7.8 eV	4700	$9.4 \cdot 10^6$	1100	$3.0 \cdot 10^7$
η	0.5	884	$1.8 \cdot 10^6$	229	$6.2 \cdot 10^6$
η’	4.3	642	$1.3 \cdot 10^6$	178	$4.8 \cdot 10^6$
f_0(980)	0.6	75	$1.5 \cdot 10^5$	21	$5.6 \cdot 10^5$
f_2(1270)	2.8	514	$1.0 \cdot 10^6$	149	$4.0 \cdot 10^6$
a_2(1320)	1.0	155	$3.1 \cdot 10^5$	45	$1.2 \cdot 10^6$
f_2’(1525)	0.1	7	$1.4 \cdot 10^4$	2	$5.8 \cdot 10^4$
η_c(2980)	7.5	2	$4.7 \cdot 10^3$	1	$2.3 \cdot 10^4$
$\mu^+\mu^-$	—	130mb	$2.7 \cdot 10^8$	33mb	$8.9 \cdot 10^8$
$\tau^+\tau^-$	—	0.65	$1.3 \cdot 10^3$	0.29	$8.0 \cdot 10^3$
$\rho^0\rho^0$	—	20	$4.0 \cdot 10^4$	6	$1.6 \cdot 10^5$

– Typical rates of $10^5 – 10^7$ events/year for mesons in the mass range $0 \leq m \leq 2.0$ GeV/c^2.