

RESULTS FOR 10 ON 100 GEV (10/FB)

J/ ψ AND γ AT ATHENA FROM FULL SIMULATION

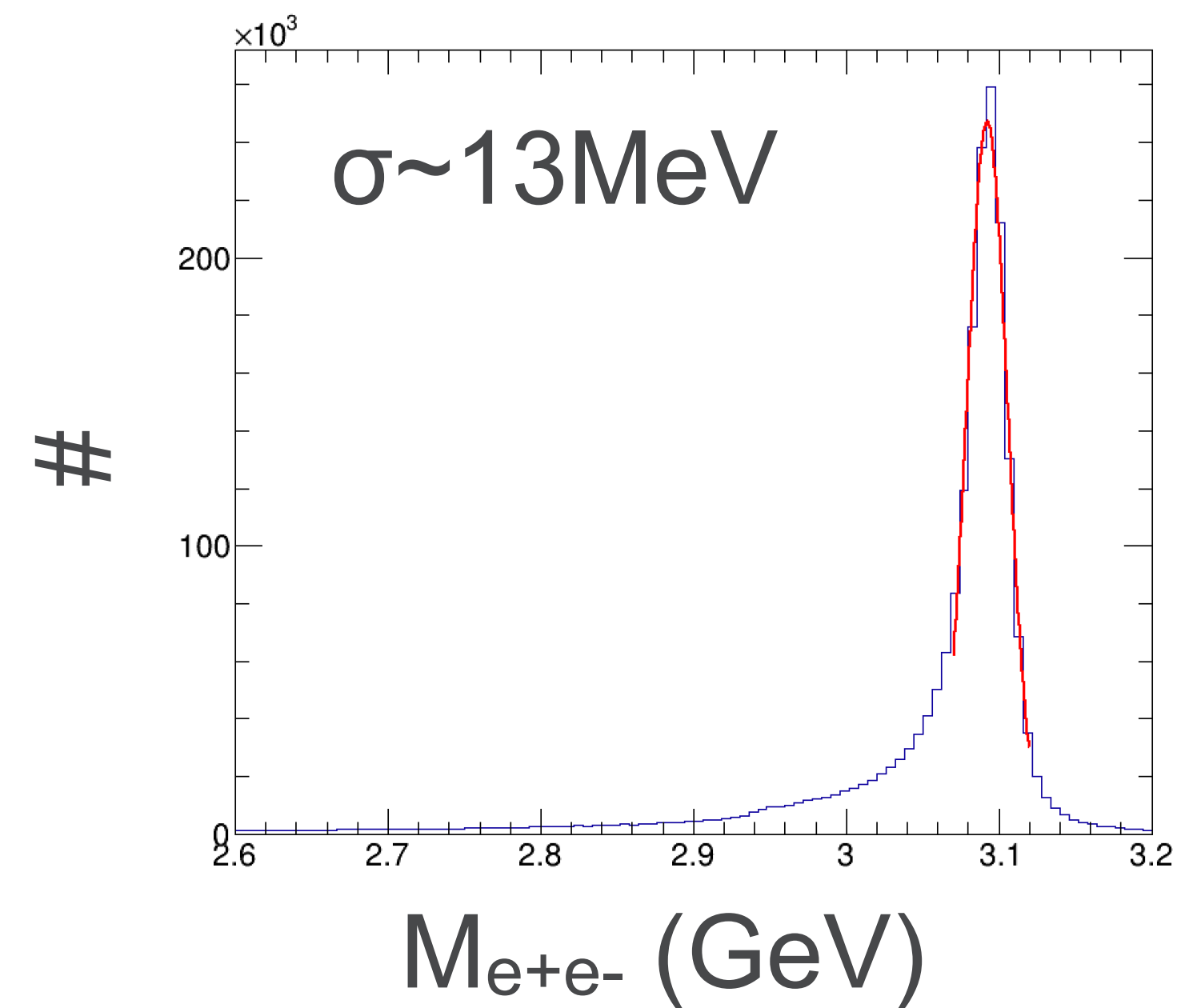
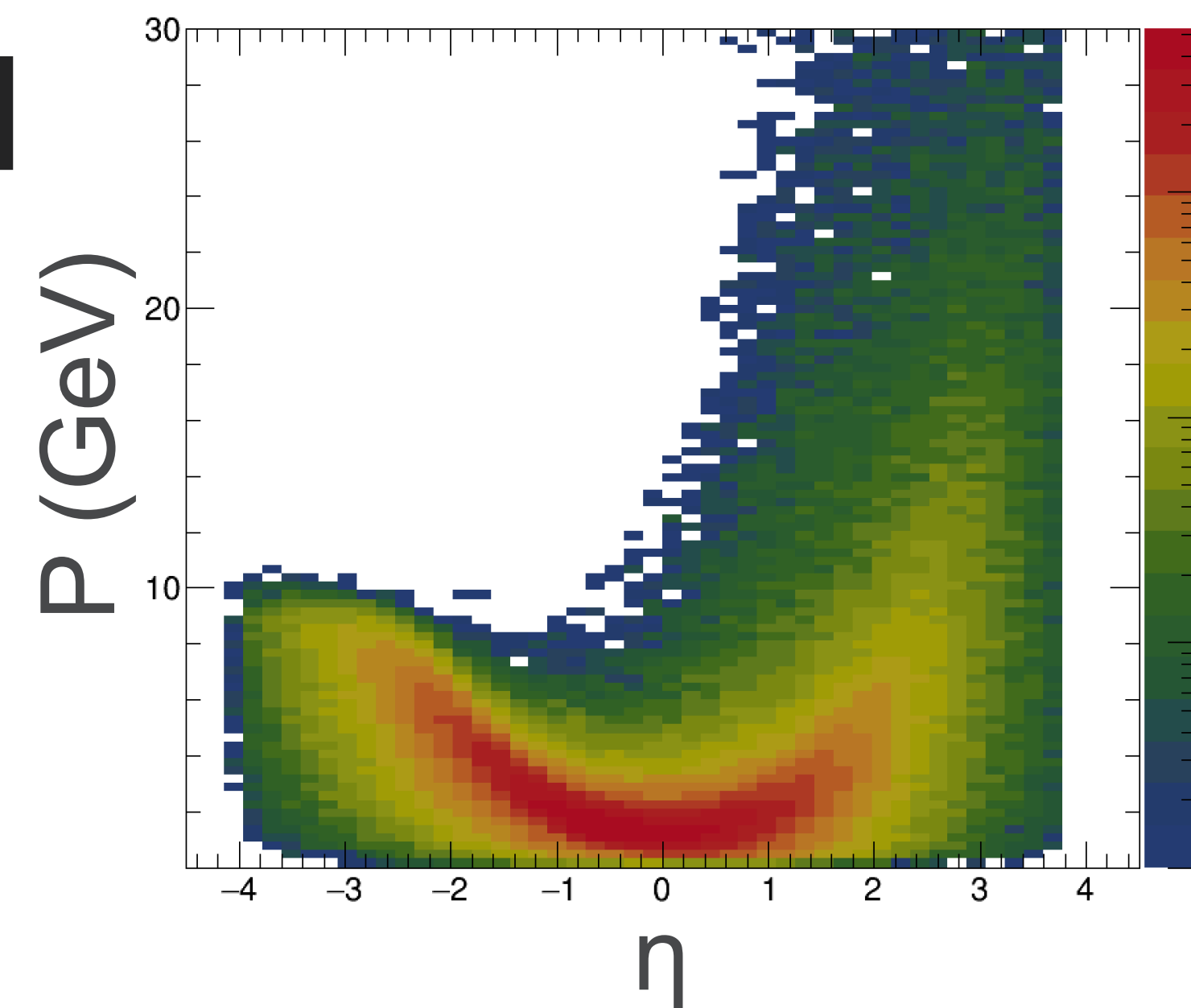
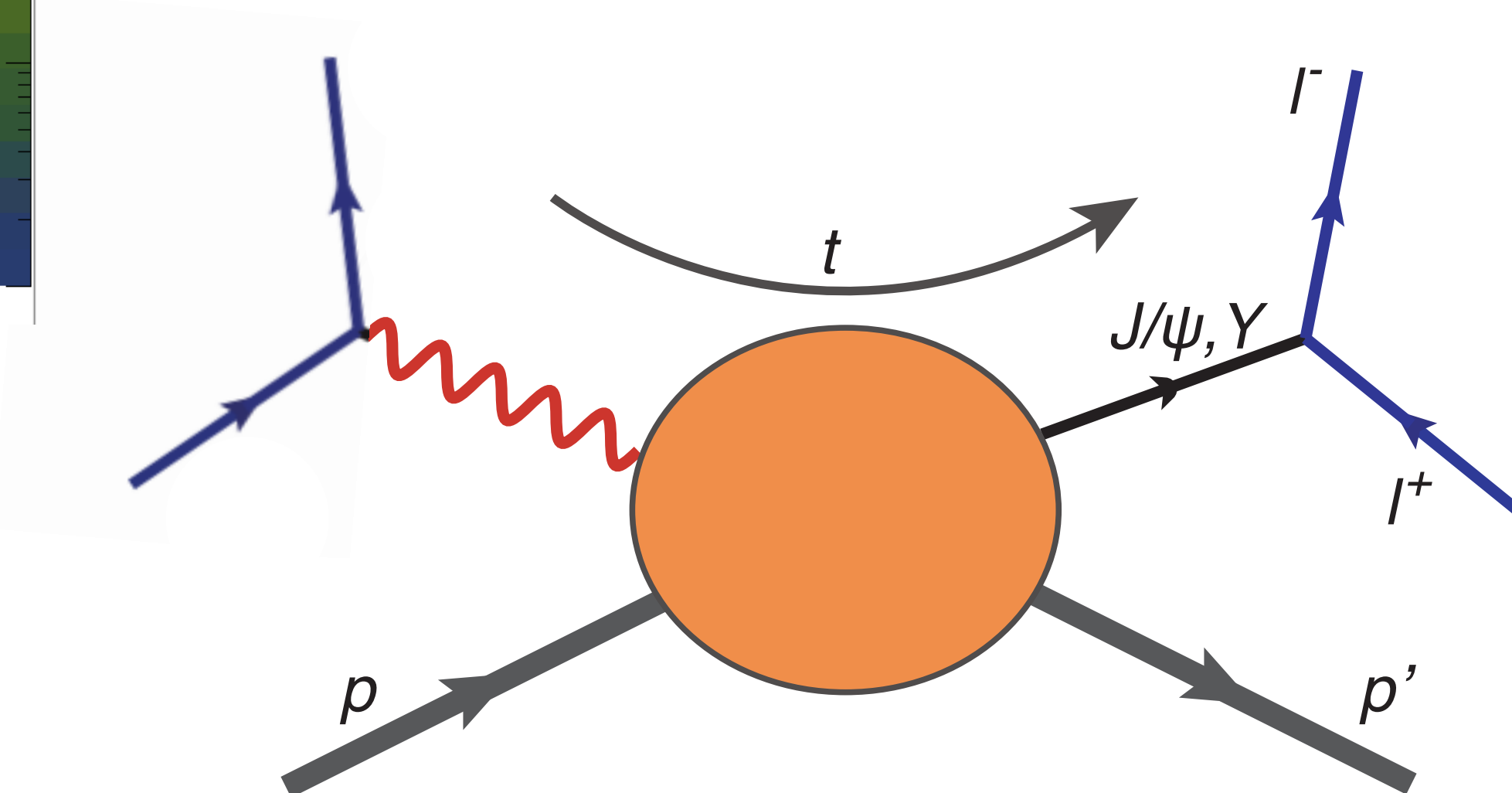
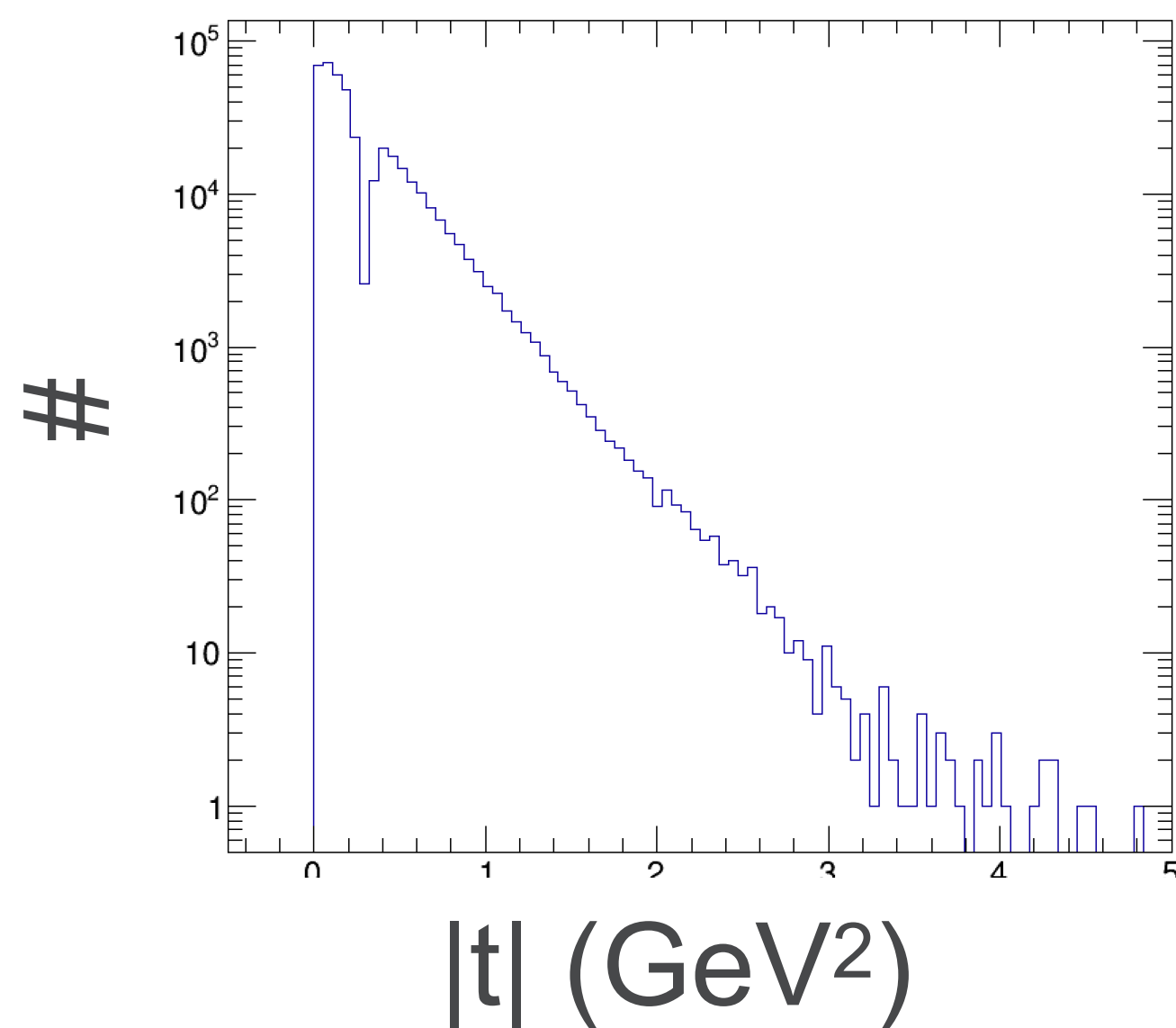
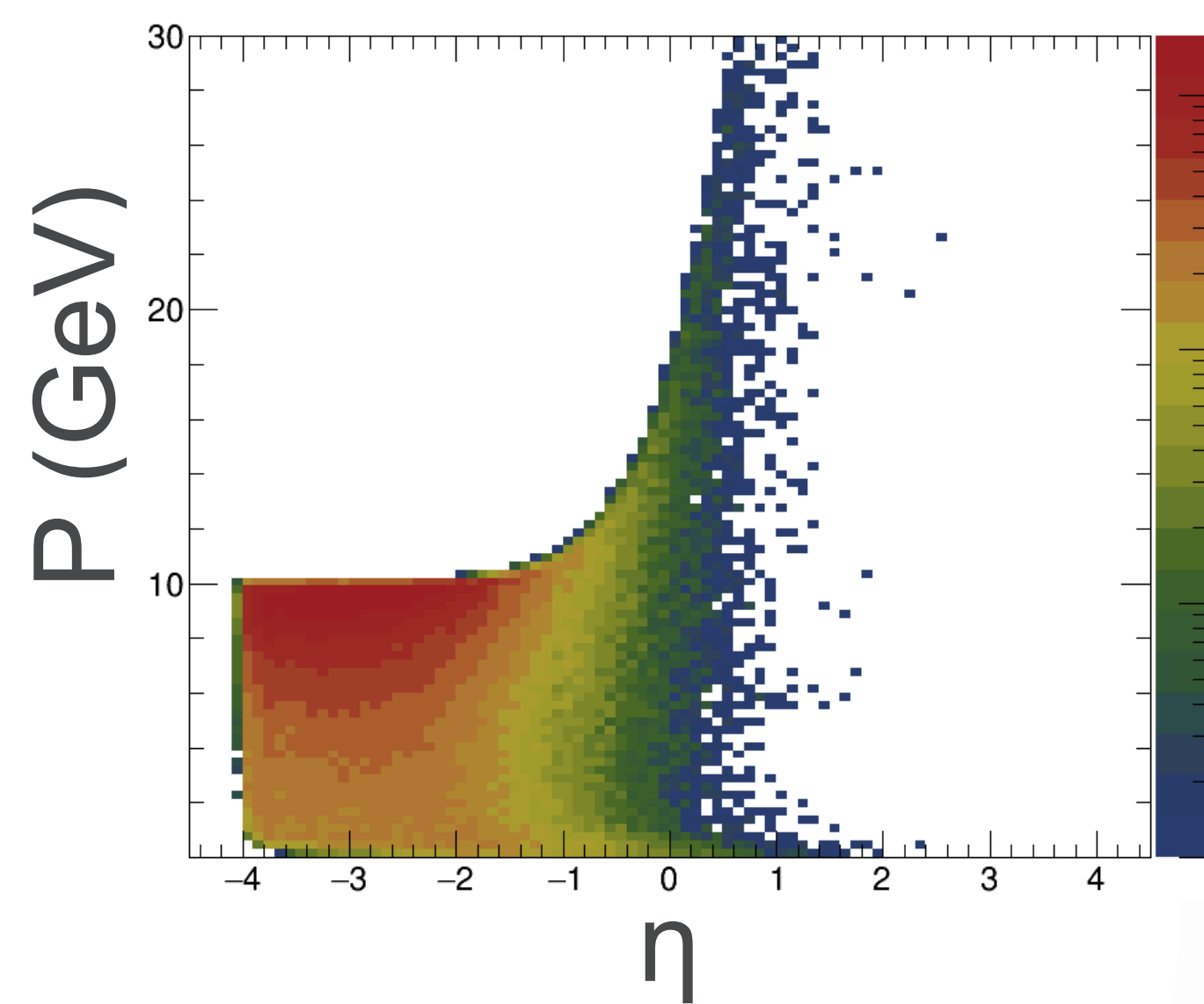


SYLVESTER JOOSTEN
sjoosten@anl.gov

CHAO PENG
SHIVANGI PRASAD
ZEIN-EDDINE MEZIANI

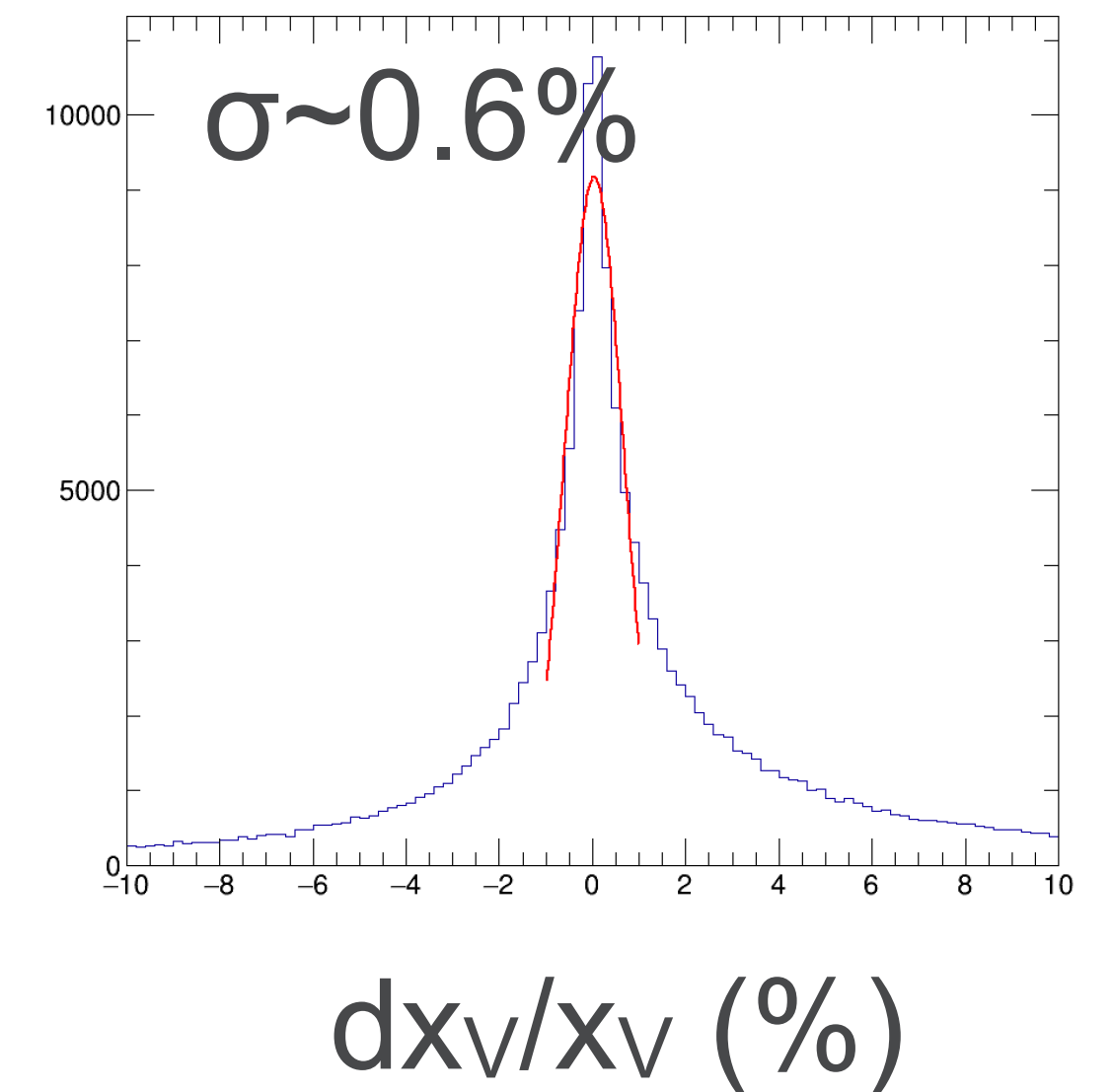
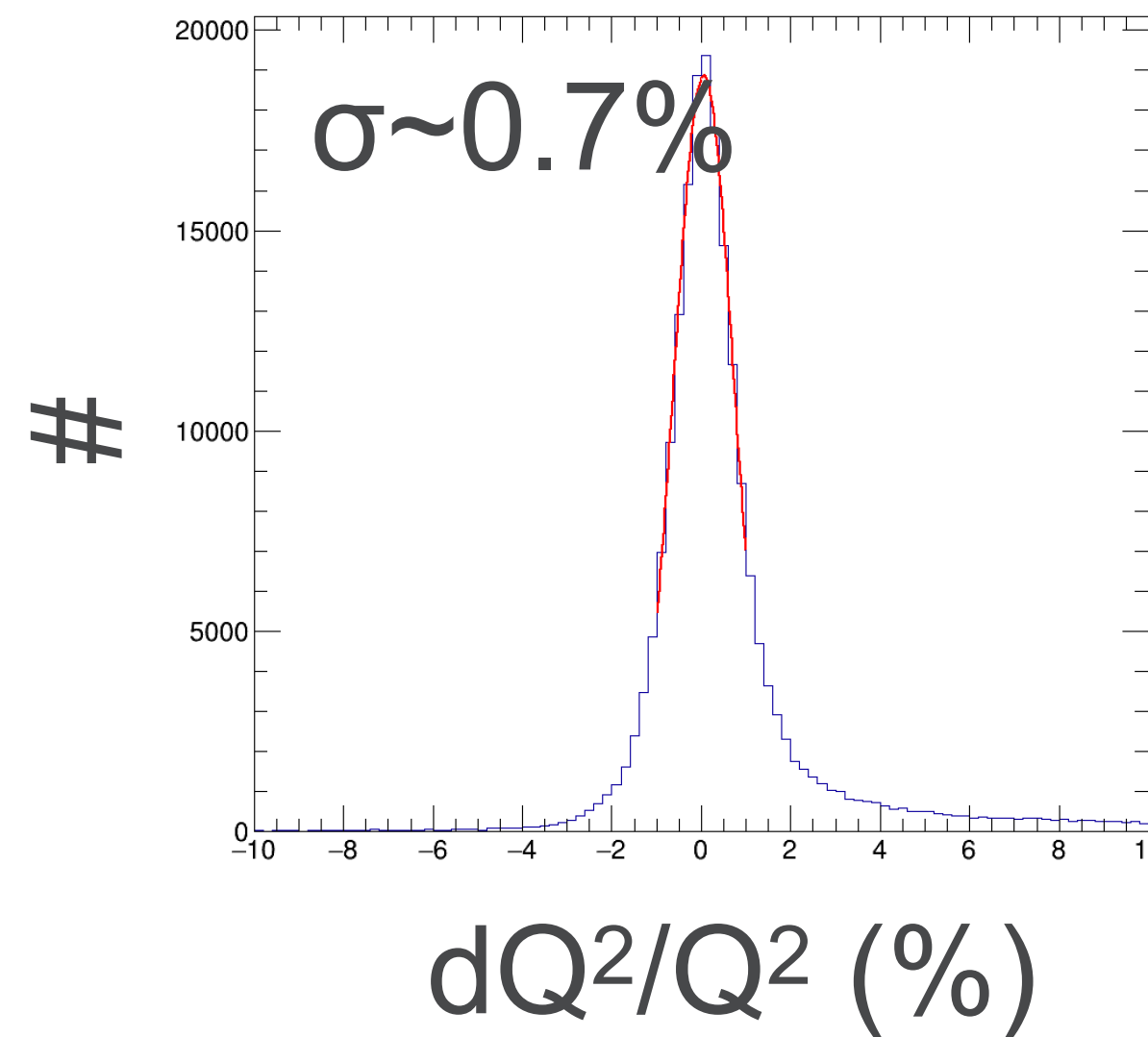
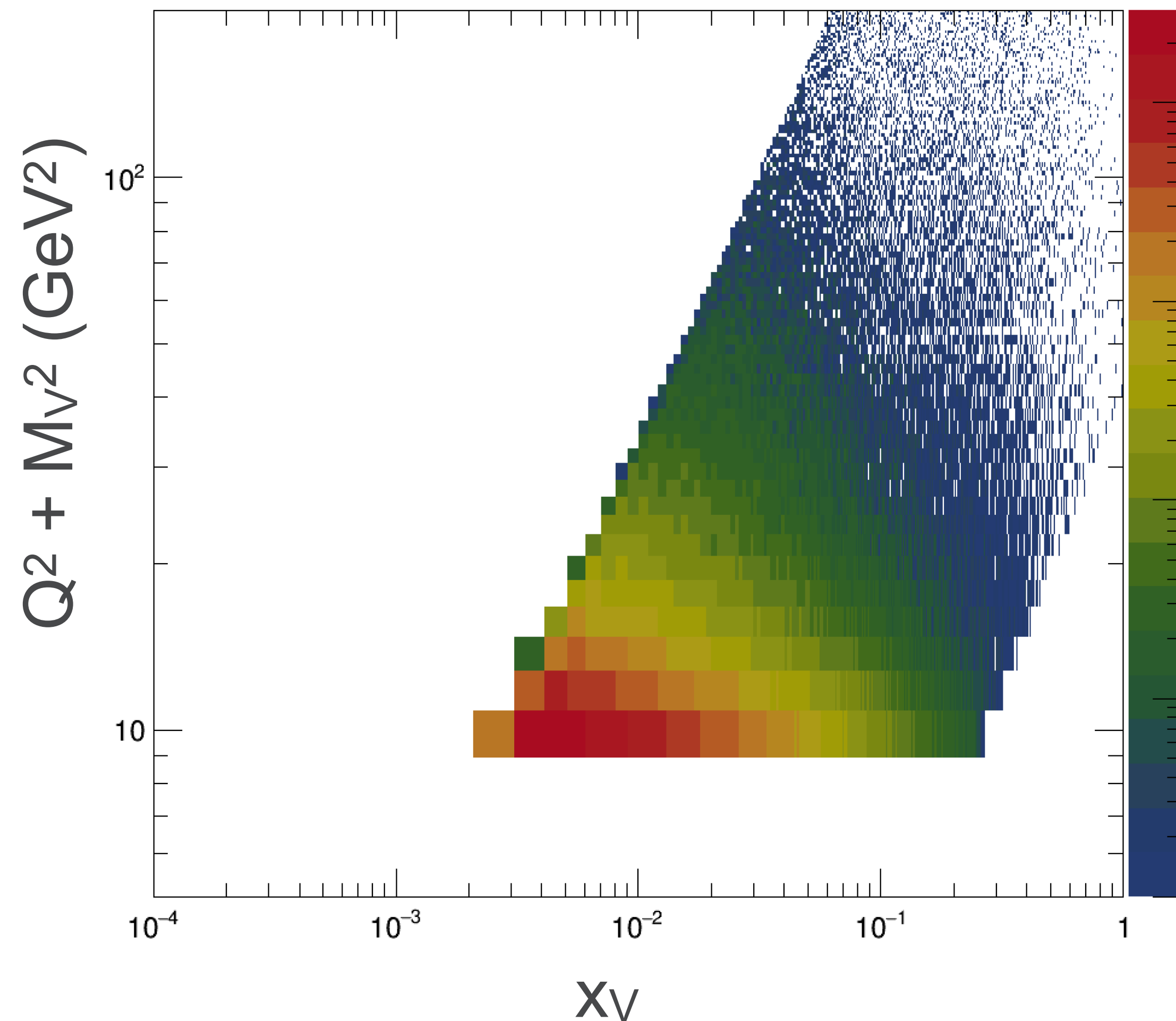
Fully exclusive measurement (10on100, 10/fb)

EXCLUSIVE J/ψ RECONSTRUCTION



Scattered lepton kinematics (10on100, 10/fb)

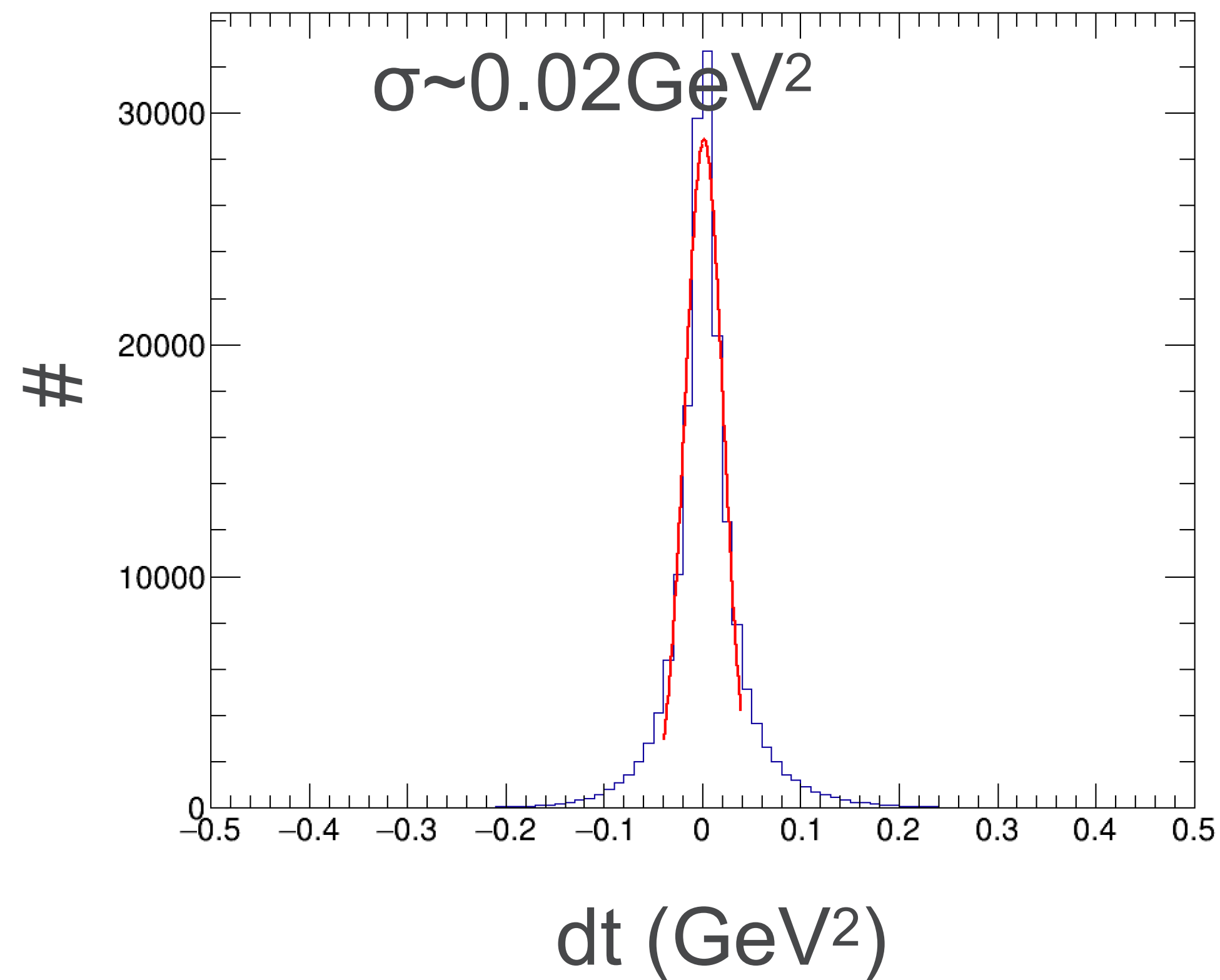
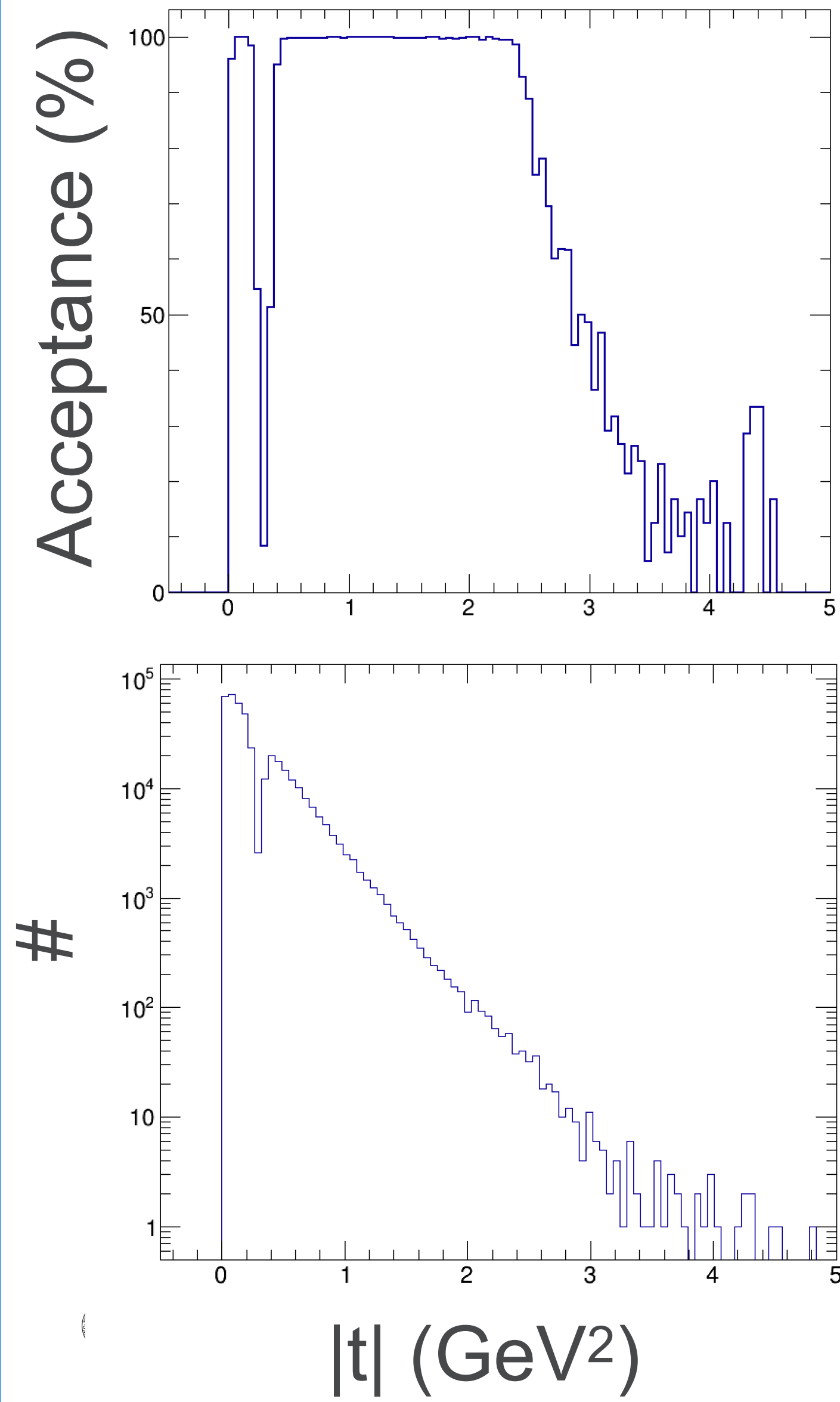
EXCLUSIVE J/ Ψ RECONSTRUCTION



Long tails on x_V due to material effects in the detector

Recoil kinematics (10on100, 10/fb)

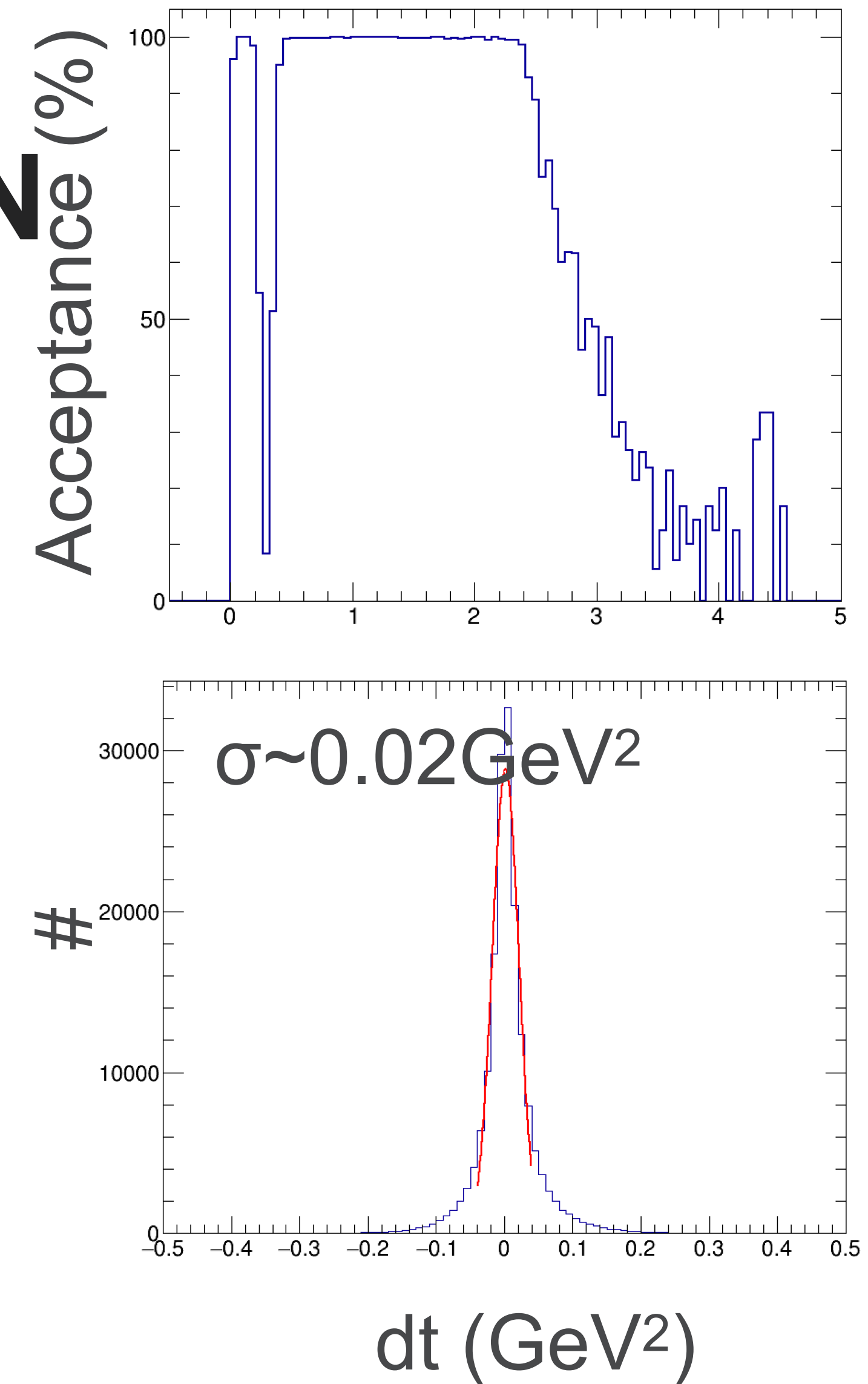
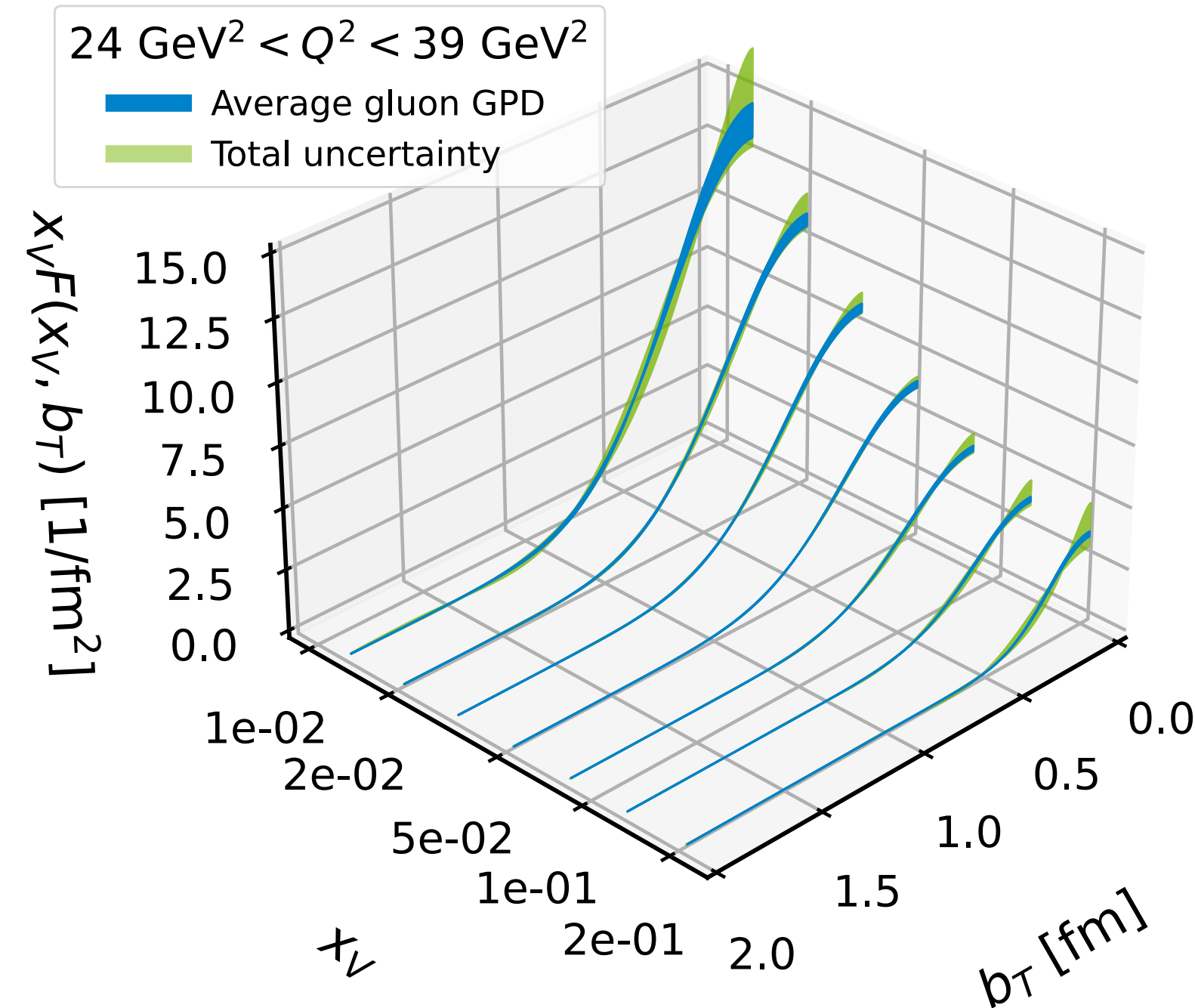
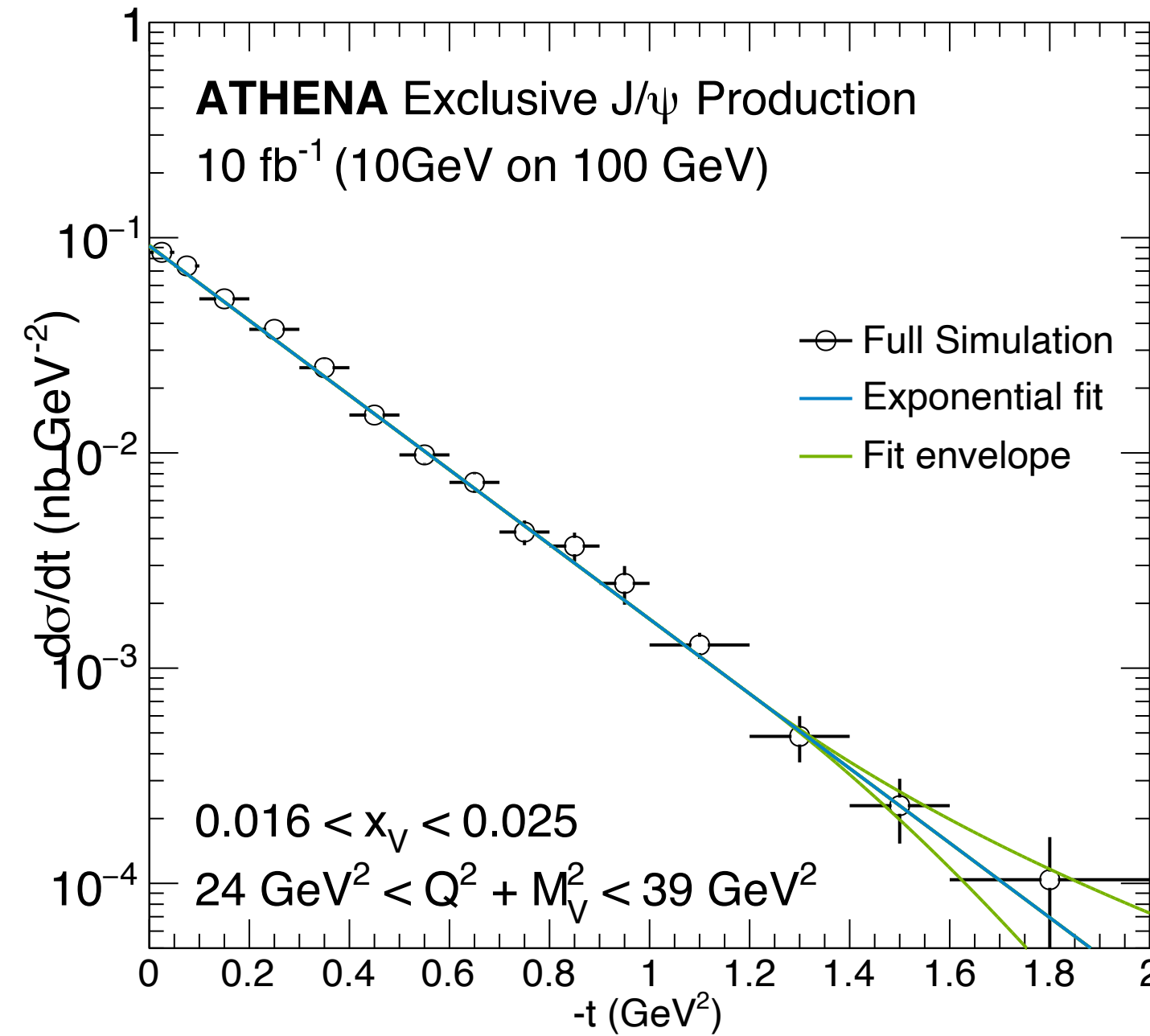
EXCLUSIVE J/ Ψ RECONSTRUCTION



RP-B0 gap clearly visible for $|t| \sim 0.4 \text{ GeV}^2$
Overall good acceptance (and resolution) for $|t|$ up to 2.5 GeV^2

Physics impact on gluon distribution

EXCLUSIVE J/ψ RECONSTRUCTION



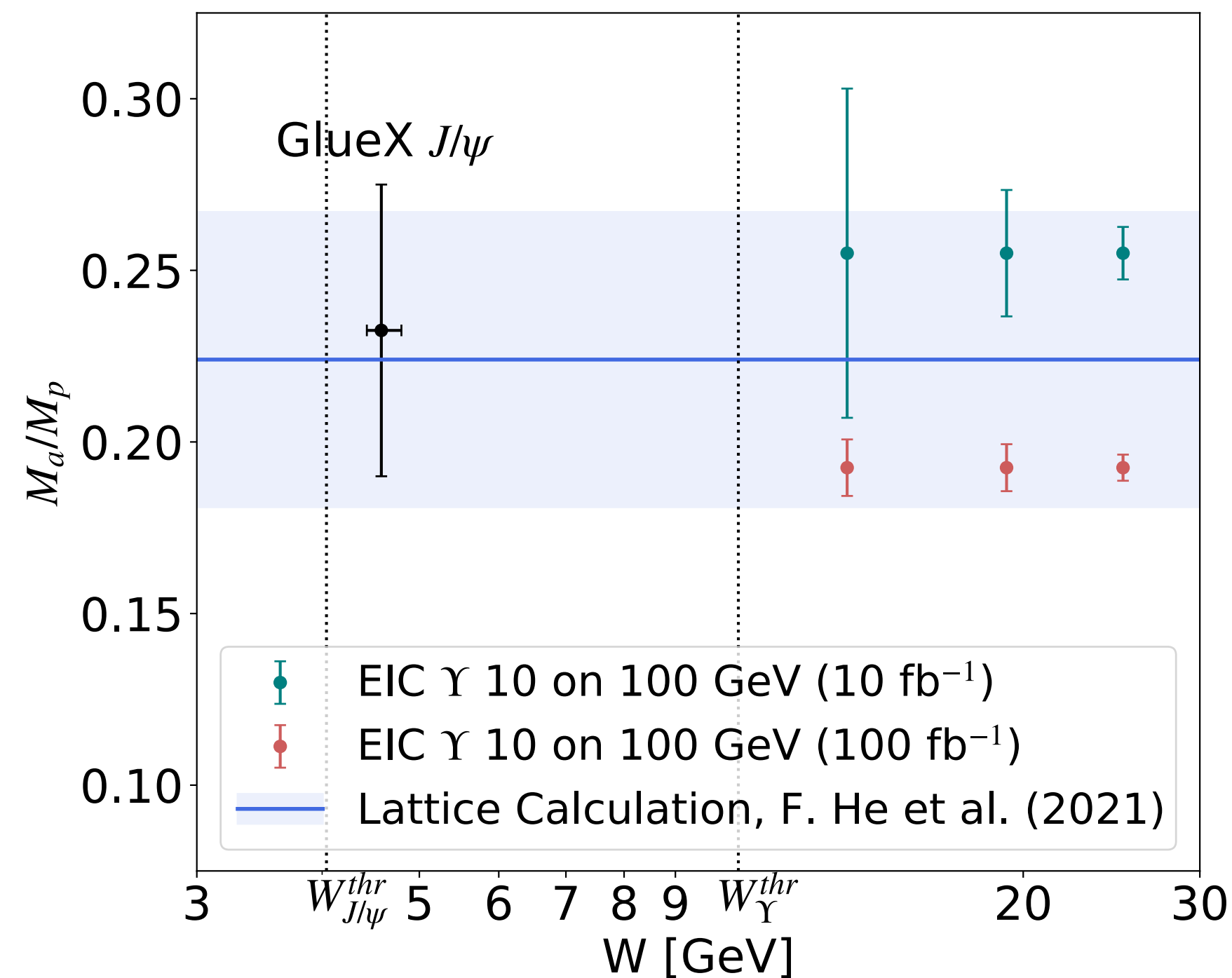
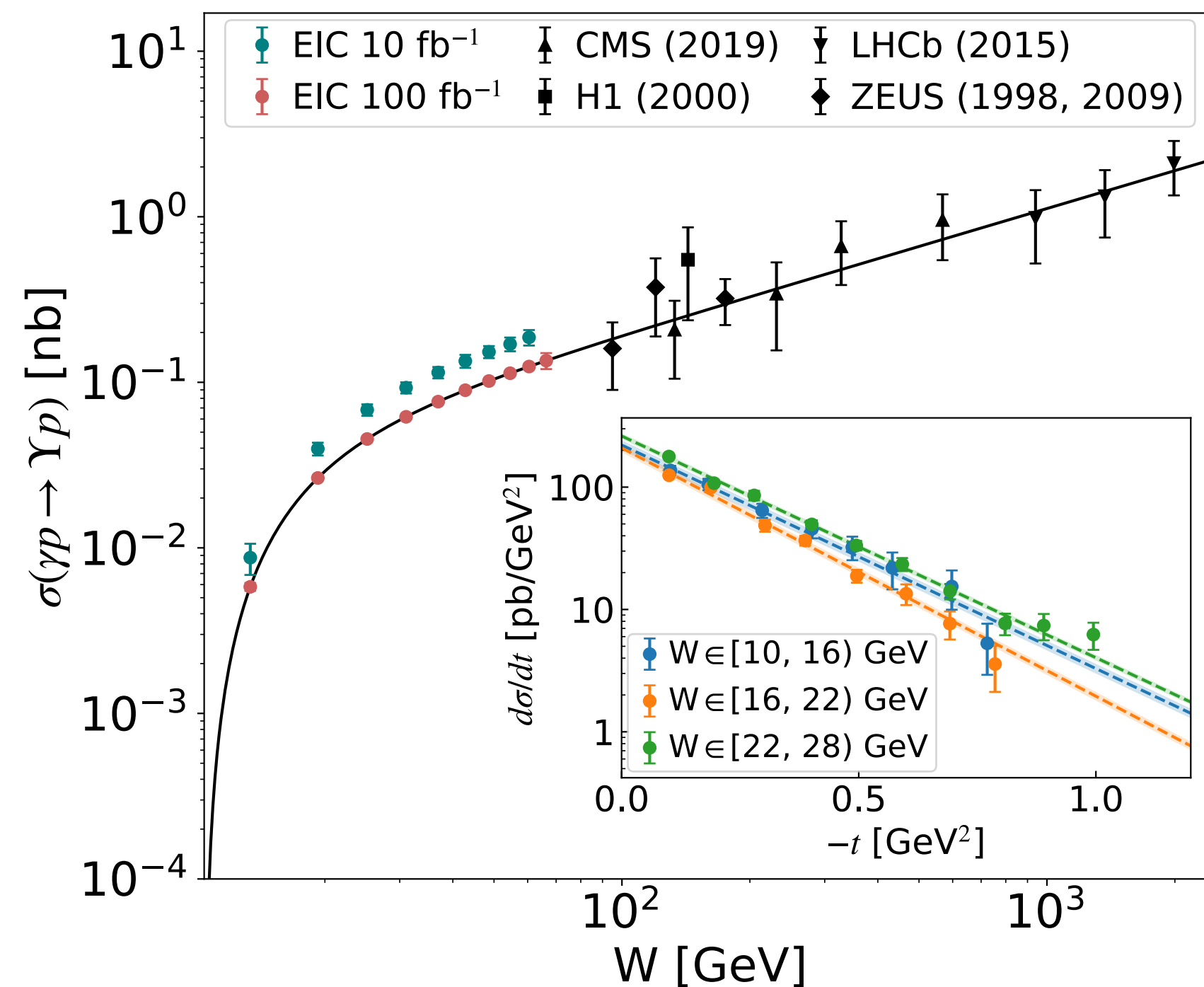
Could indicate t -resolution on left figure, and overlay t -acceptance histogram (with right axes)

Photoproduction impact on Ma (electron + muon channel)

EXCLUSIVE Υ RECONSTRUCTION

Measuring hadronic final state only

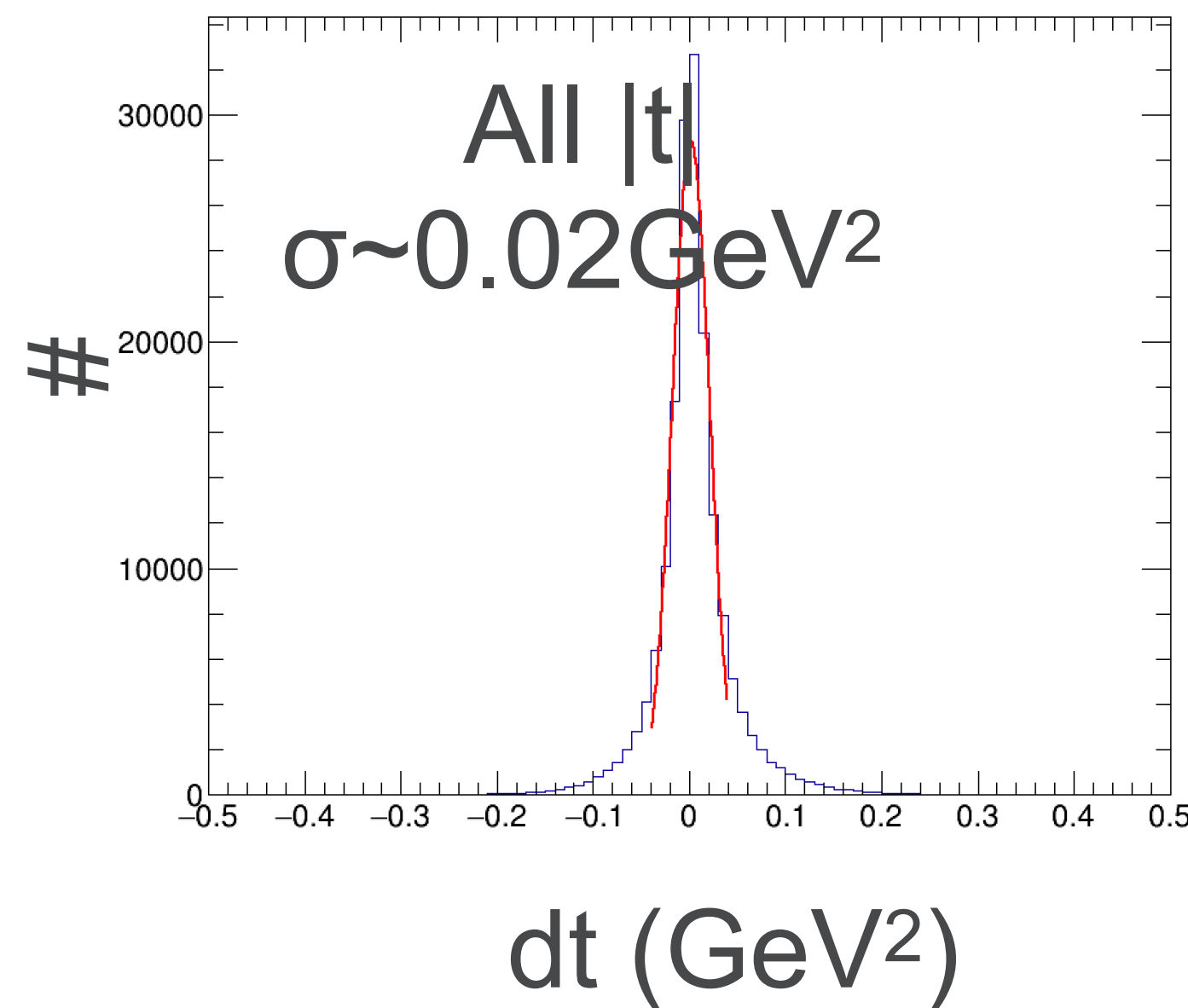
Question: what will be the “year 1” (10/fb) impact of Υ photoproduction at ATHENA?



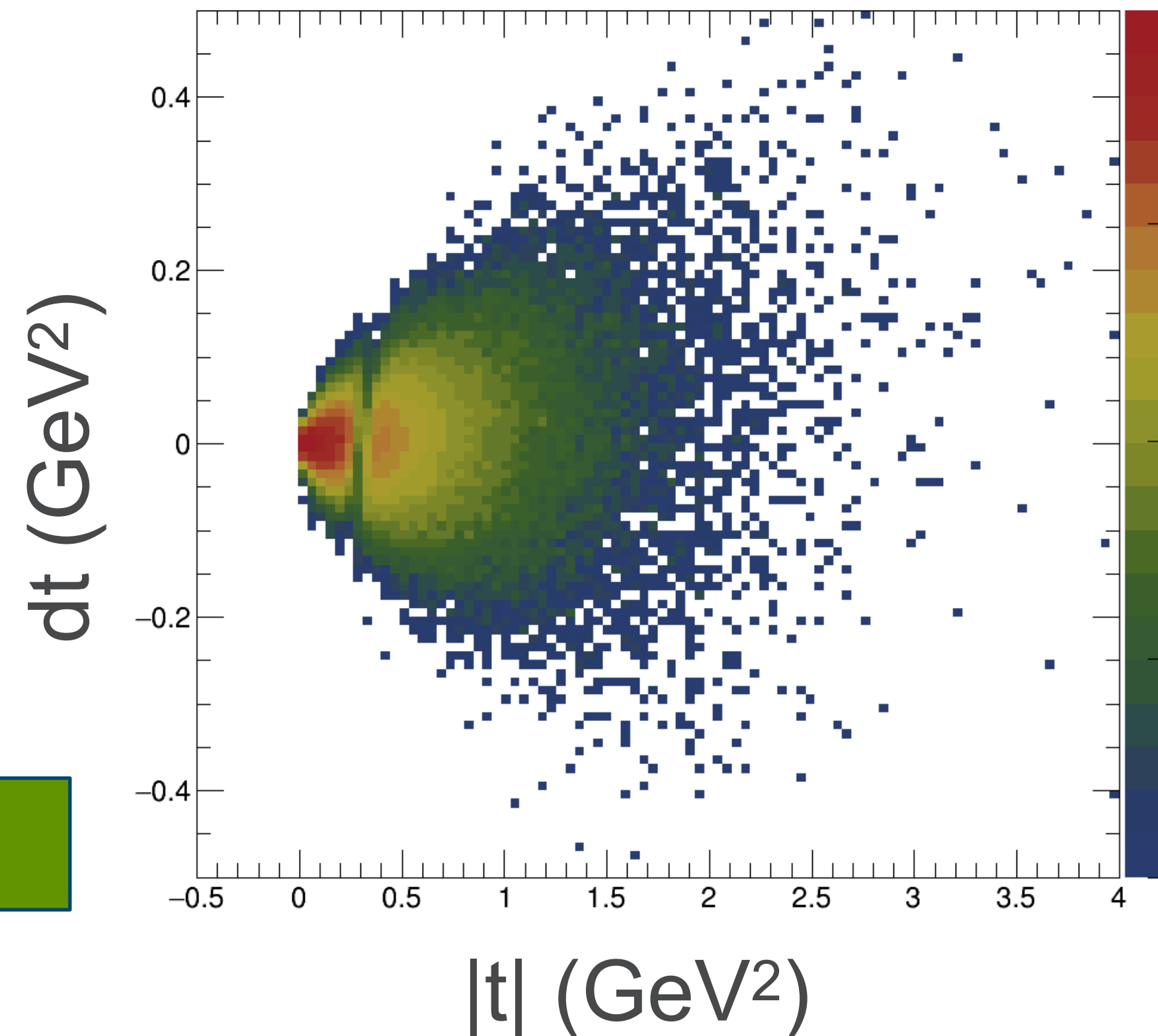
Near-threshold impact similar to first GlueX J/ψ results

t-resolution

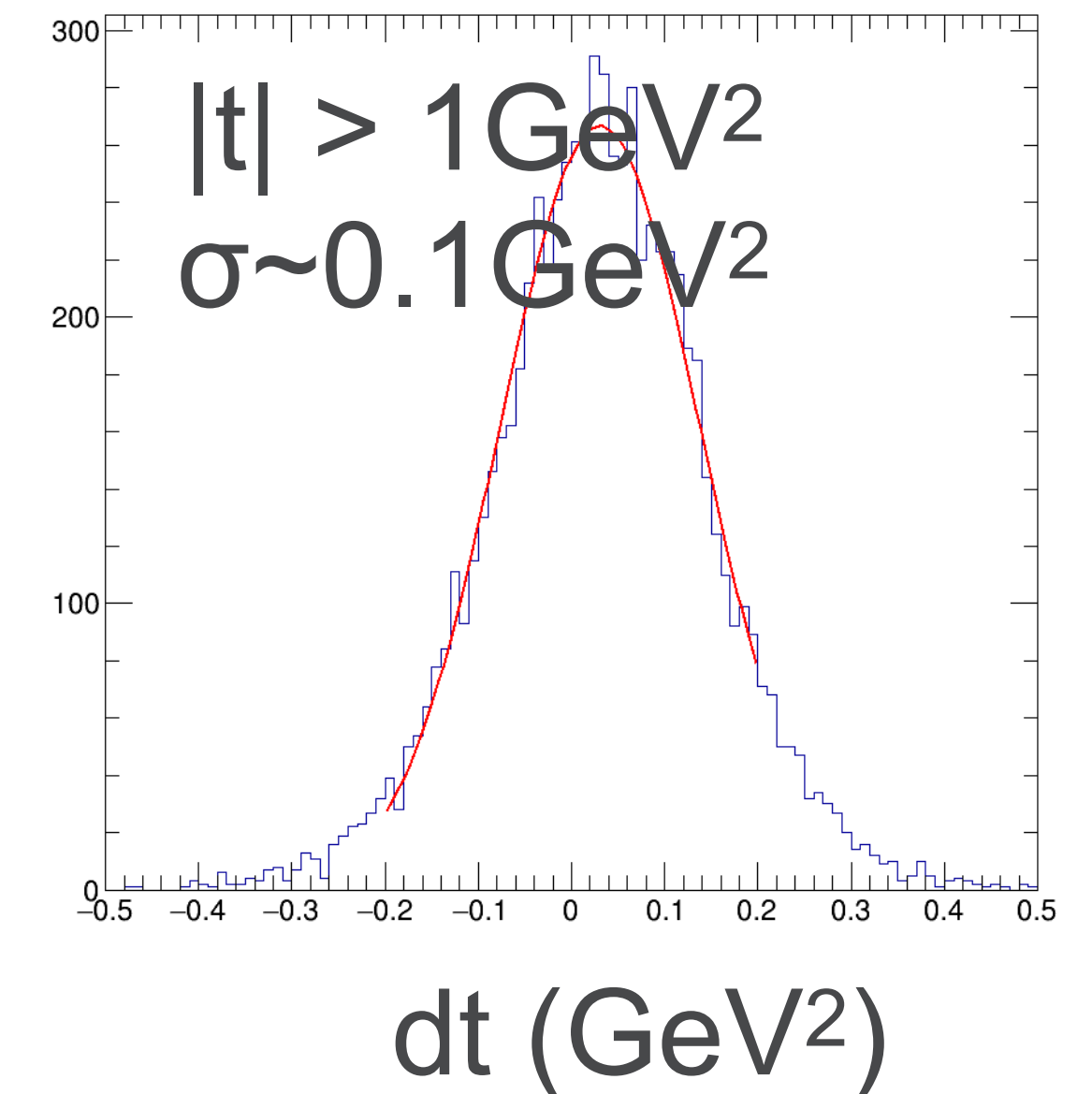
EXCLUSIVE J/ψ RECONSTRUCTION



1D dominated by low t



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Situation 5x worse for higher t , but still sufficient for typical t -binning in this region

Phase space coverage (electron decay channel only, 100/fb)

EXCLUSIVE Υ RECONSTRUCTION

