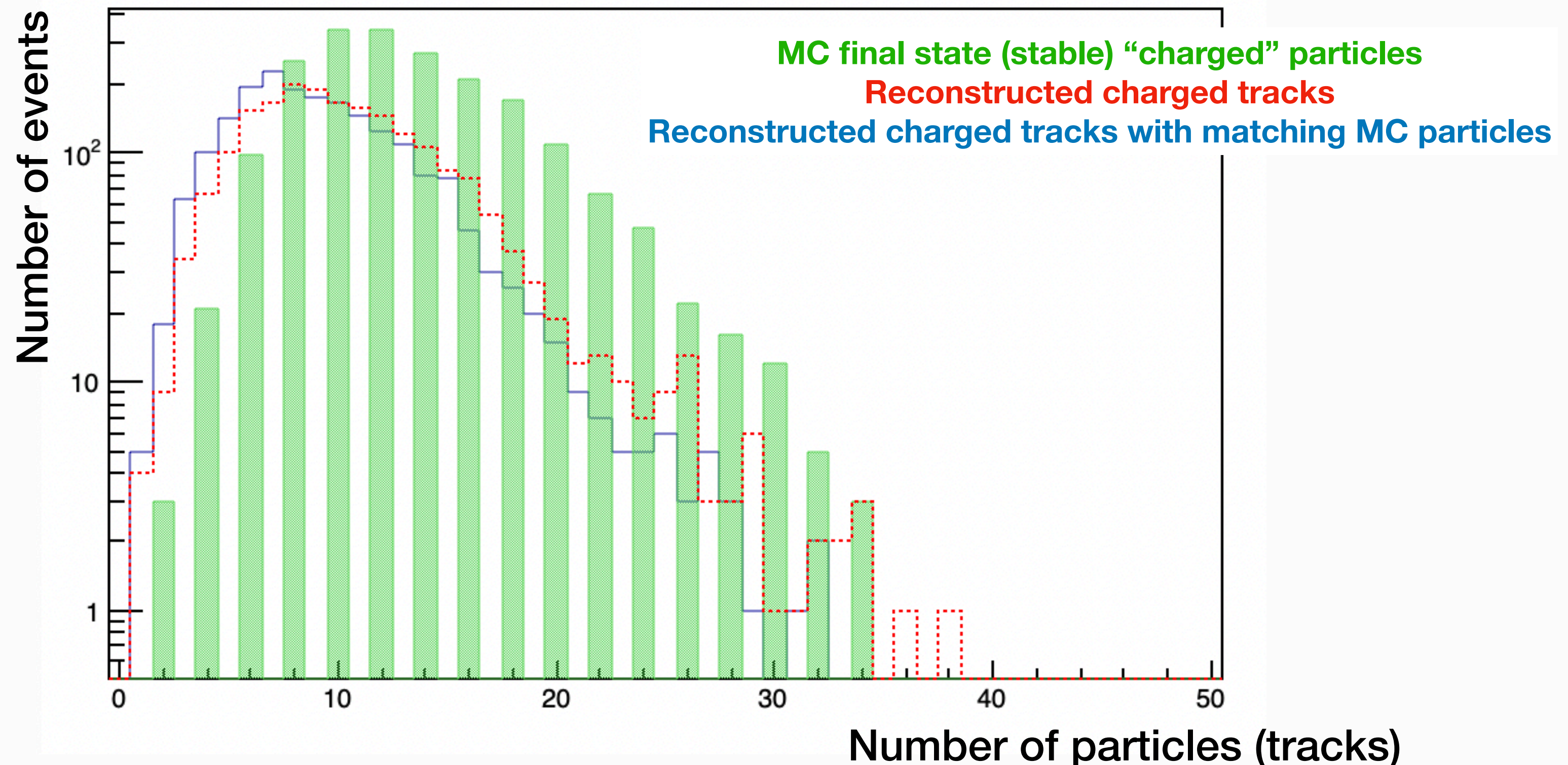# Tracking performance in DIS events
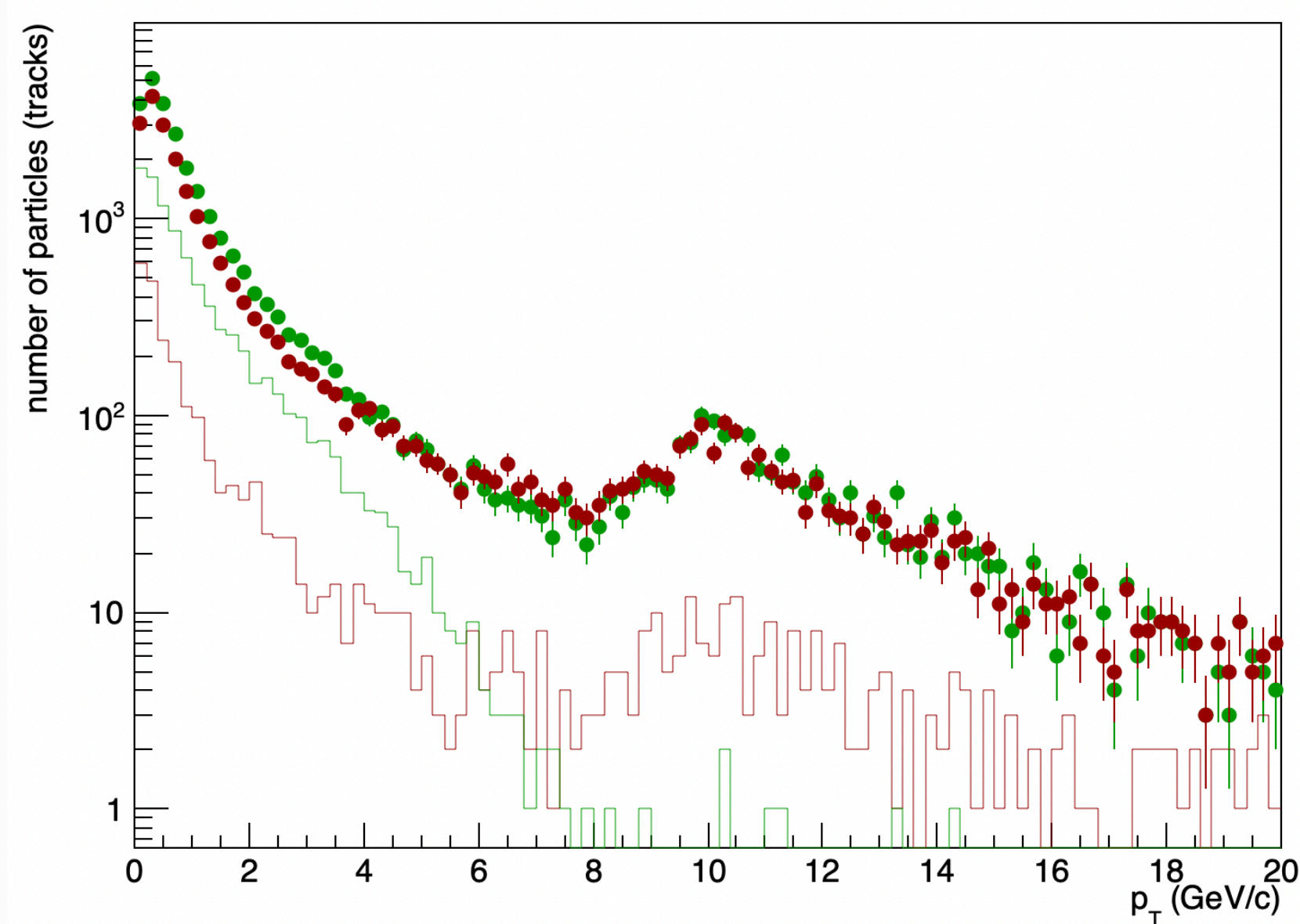
Minjung Kim

UC Berkeley

ePIC Track reconstruction meeting
10. Aug. 2023 (Thu.)

Simulation set-up

- pythia8NCDIS_18x275_minQ2=100_beamEffects_xAngle=-0.025_hiDiv_1.hepmc (2000 events)

- Detector geometry: epic.xml (similar to epic_brycecanyon, but difference in the barrel MPGD layer / latest->epic_craterlake.xml)

- True seeding at this moment

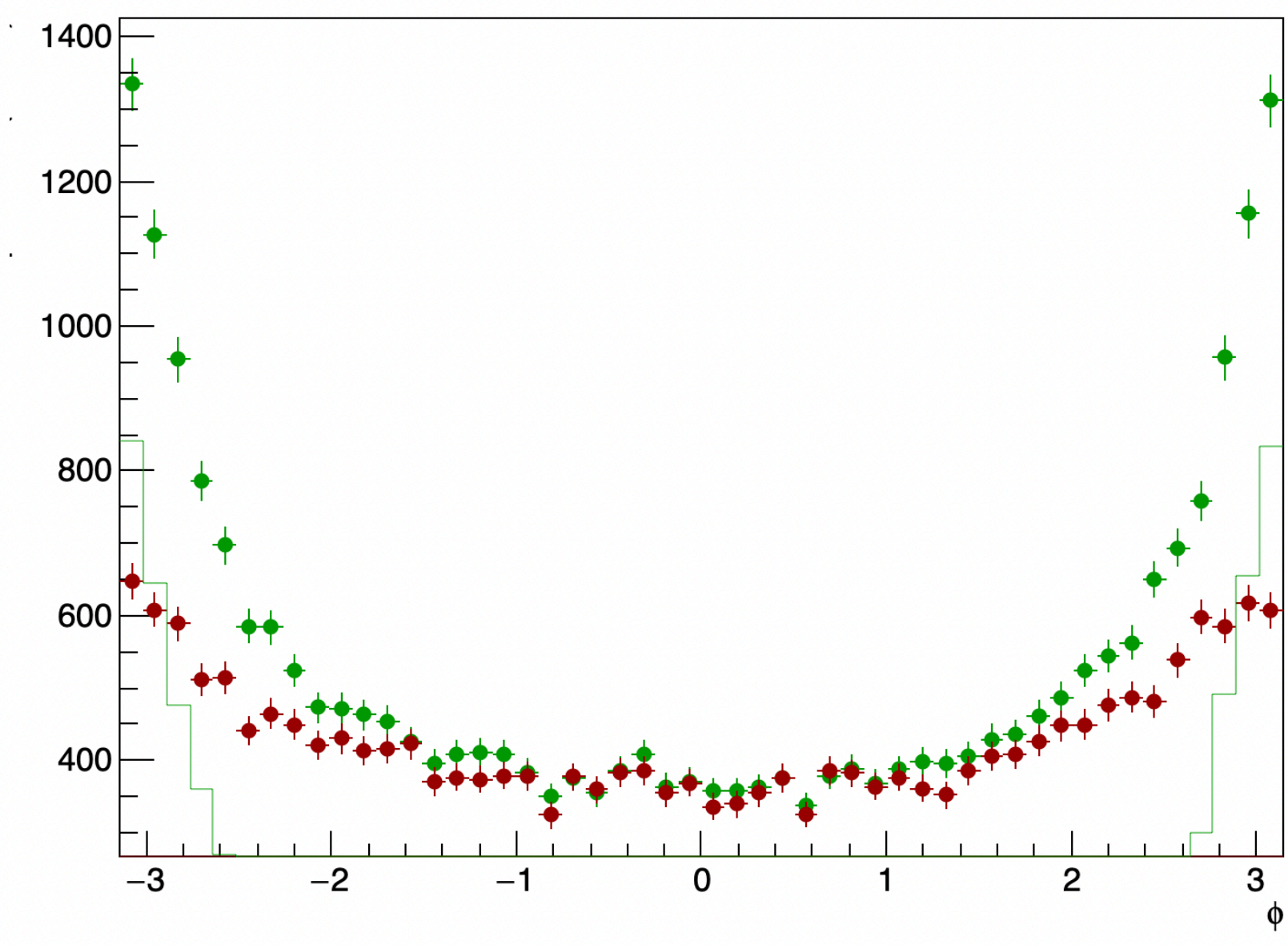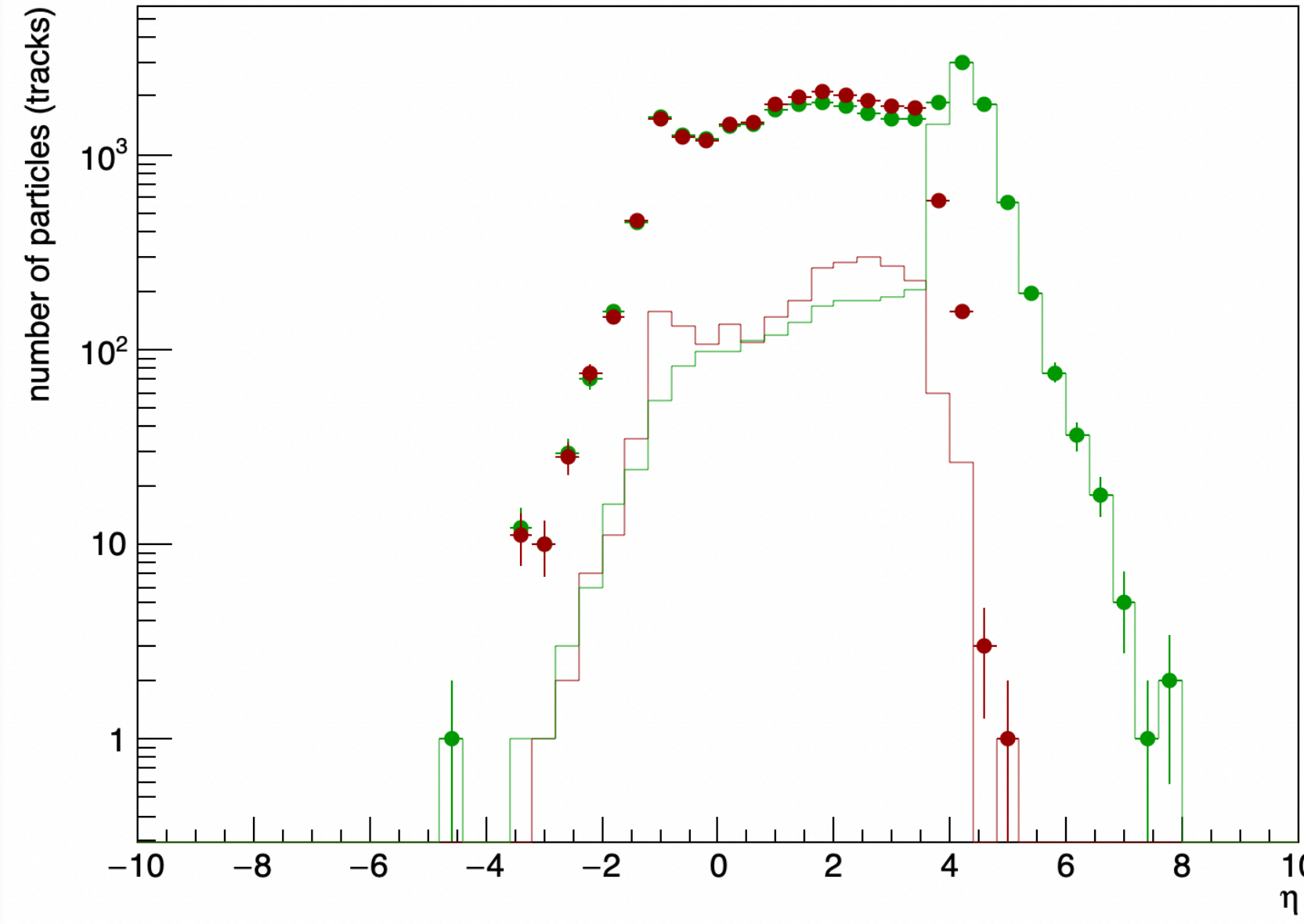- Build error for lastest-tag (10. Aug. 2023) for realistic seeding

MC final state (stable) "charged" particles
Reconstructed charged tracks
Reconstructed charged tracks with matching MC particles

Number of events

Number of particles (tracks)

First look of true seeding in DIS events

MC final state (stable) particles
Reconstructed charged tracks

MC final state (stable) particles (no matching track)
Reconstructed charged tracks (no matching MC particle)

- pT distribution of MC particle well reproduced by reconstructed track. Reconstructed charged tracks with no matching MC particle shows the bumpy structure of scattered electron; effect of multiple scattering/ Bremsstrahlung?

- Eta distribution of MC particle well reproduced by reconstructed track within the acceptance of the tracker

- Non-uniform phi distribution in MC particles => with phi dependent reconstruction efficiency; any idea?