

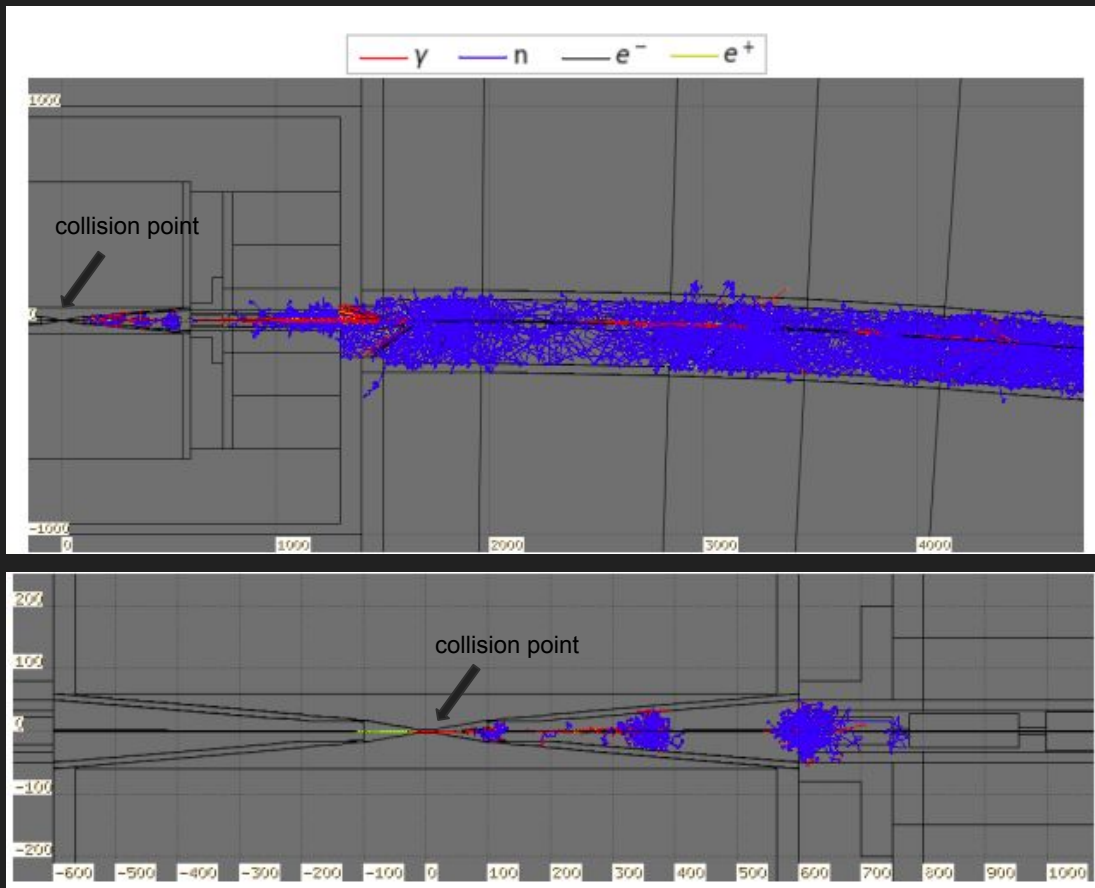
# Muon Collider Tracking Software

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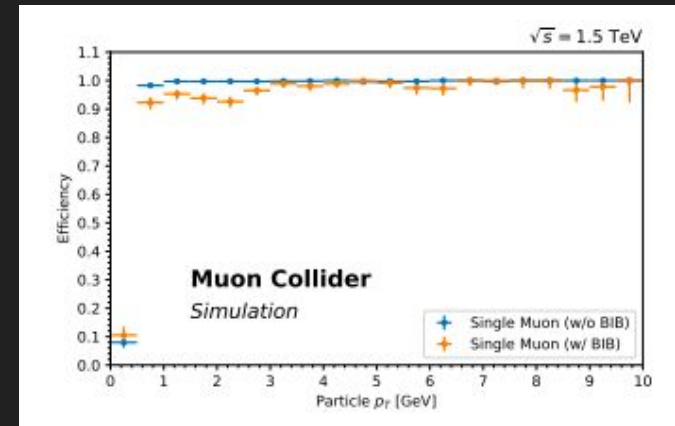
# Background

- High energy muon collisions have a lot of scientific potential
- BUT muons have a lifetime of  $\sim 2$  microseconds and produce a multitude (of order  $10^8$ ) of particles known as beam induced background (BIB)

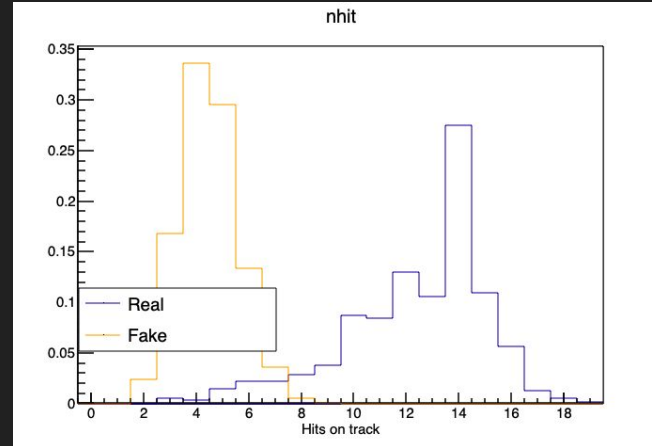
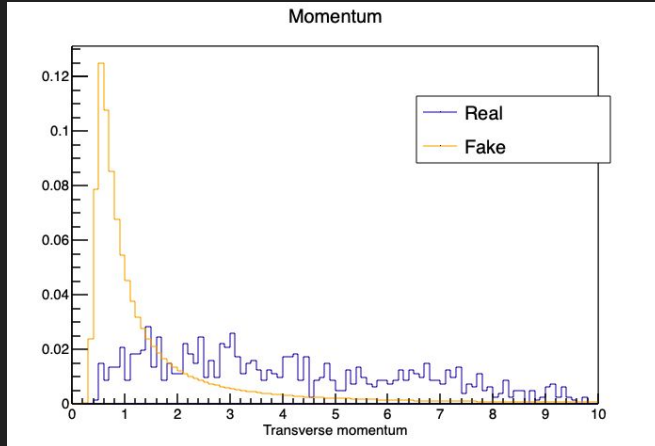


# Goal

- Optimize tracking algorithm to differentiate between “fake” tracks caused by BIB and “real” tracks from collision products.
  - Keep efficiency relatively high



C. Aimè et al., *Simulated Detector Performance at the Muon Collider for Snowmass 2021*, 15 March 2022



Thanks for your time!