

Explorative Timing Outlook - Data & Simulation

August 23th, 2018

Tokyo Analysis Workshop

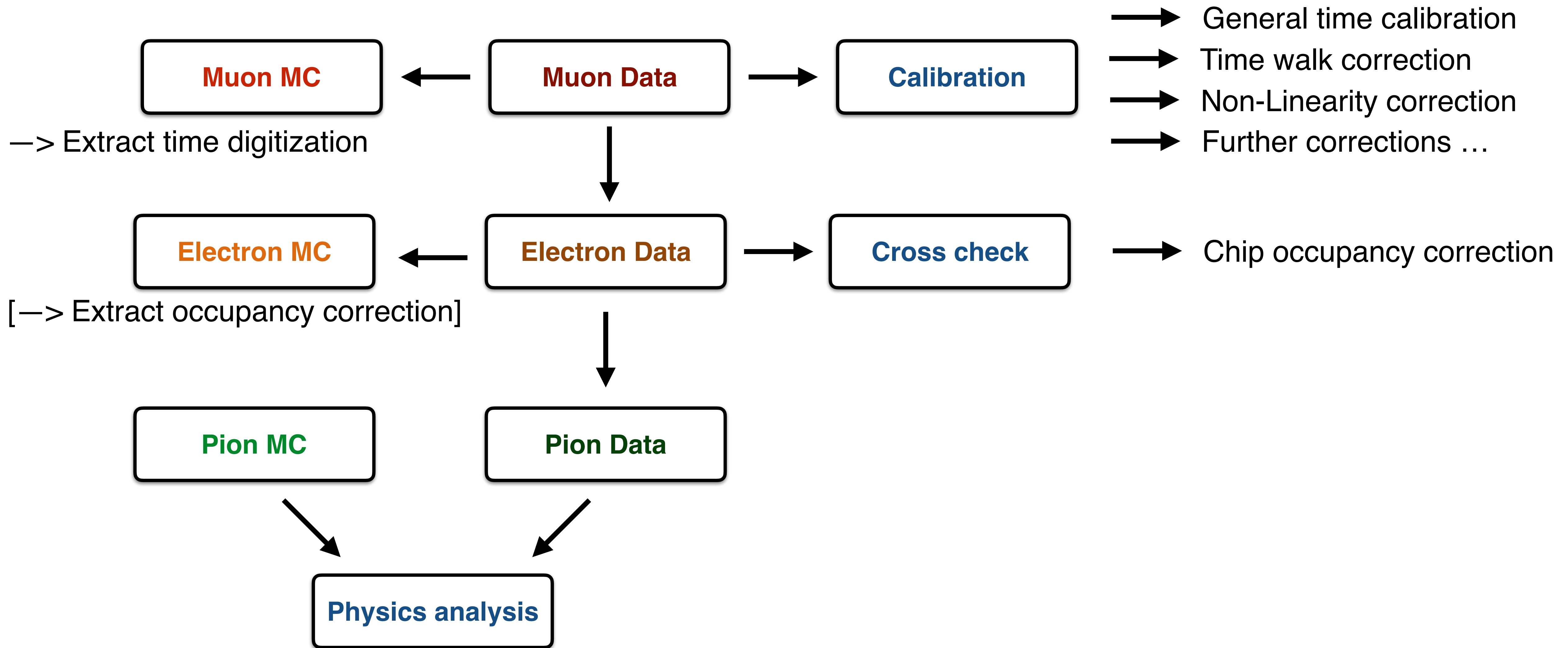
Christian Graf



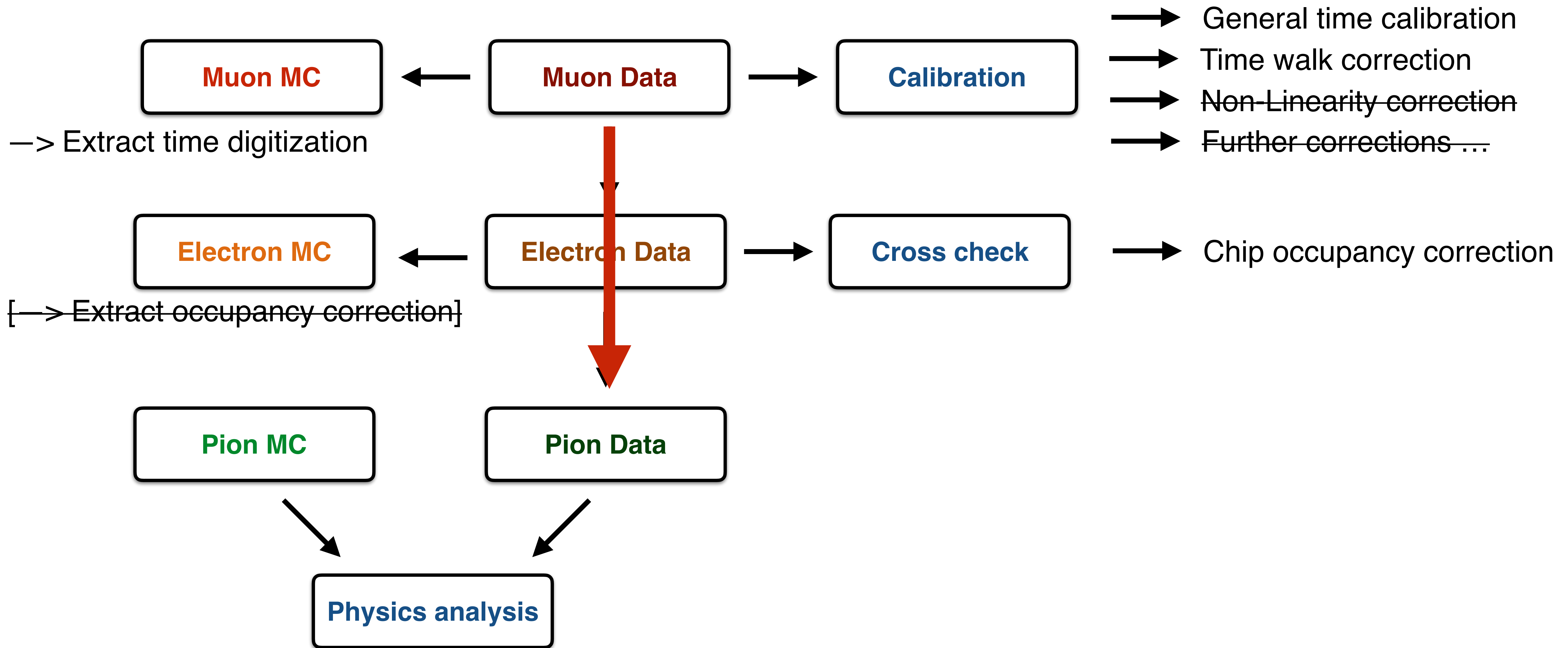
Max-Planck-Institut für Physik
(Werner-Heisenberg-Institut)



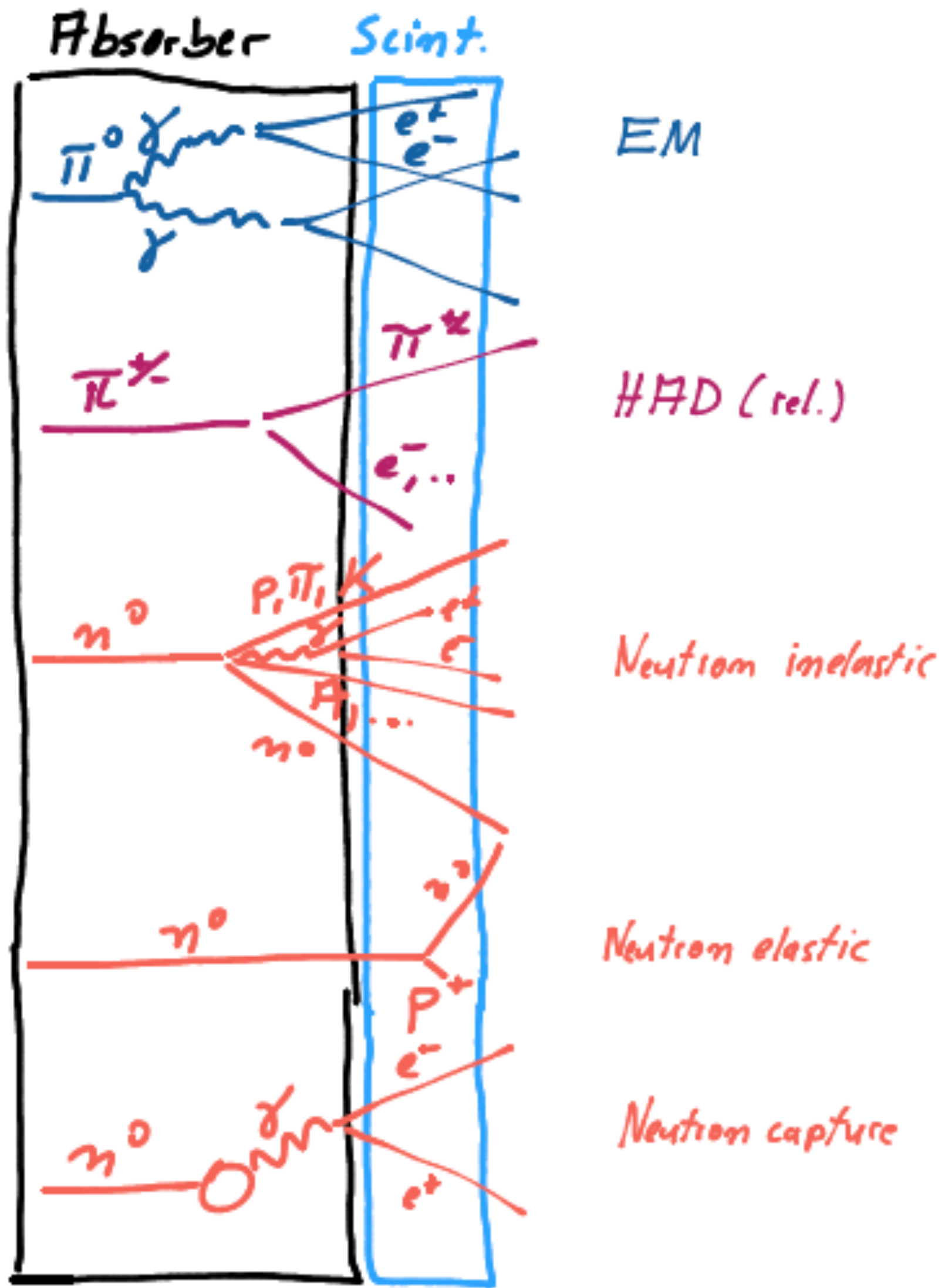
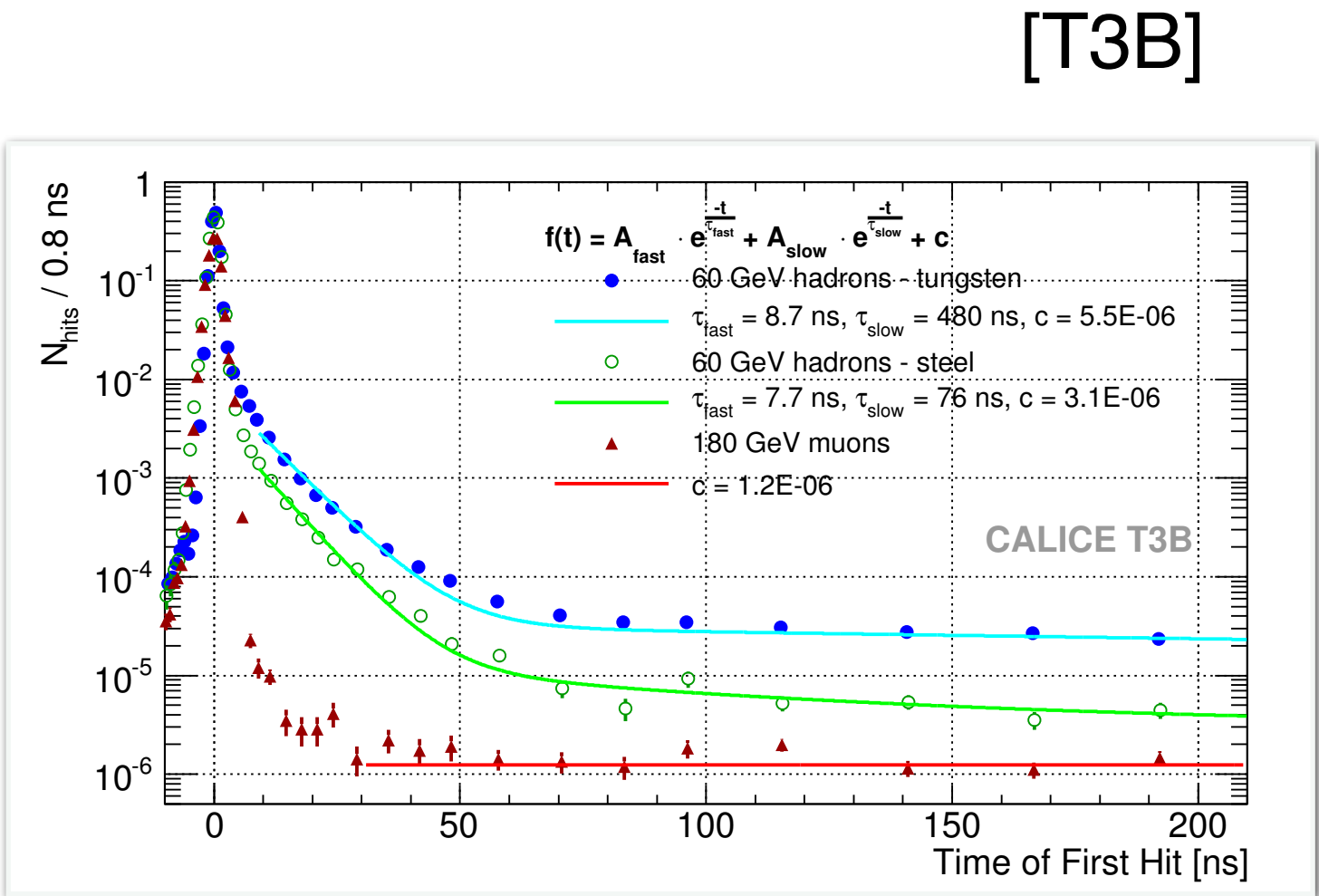
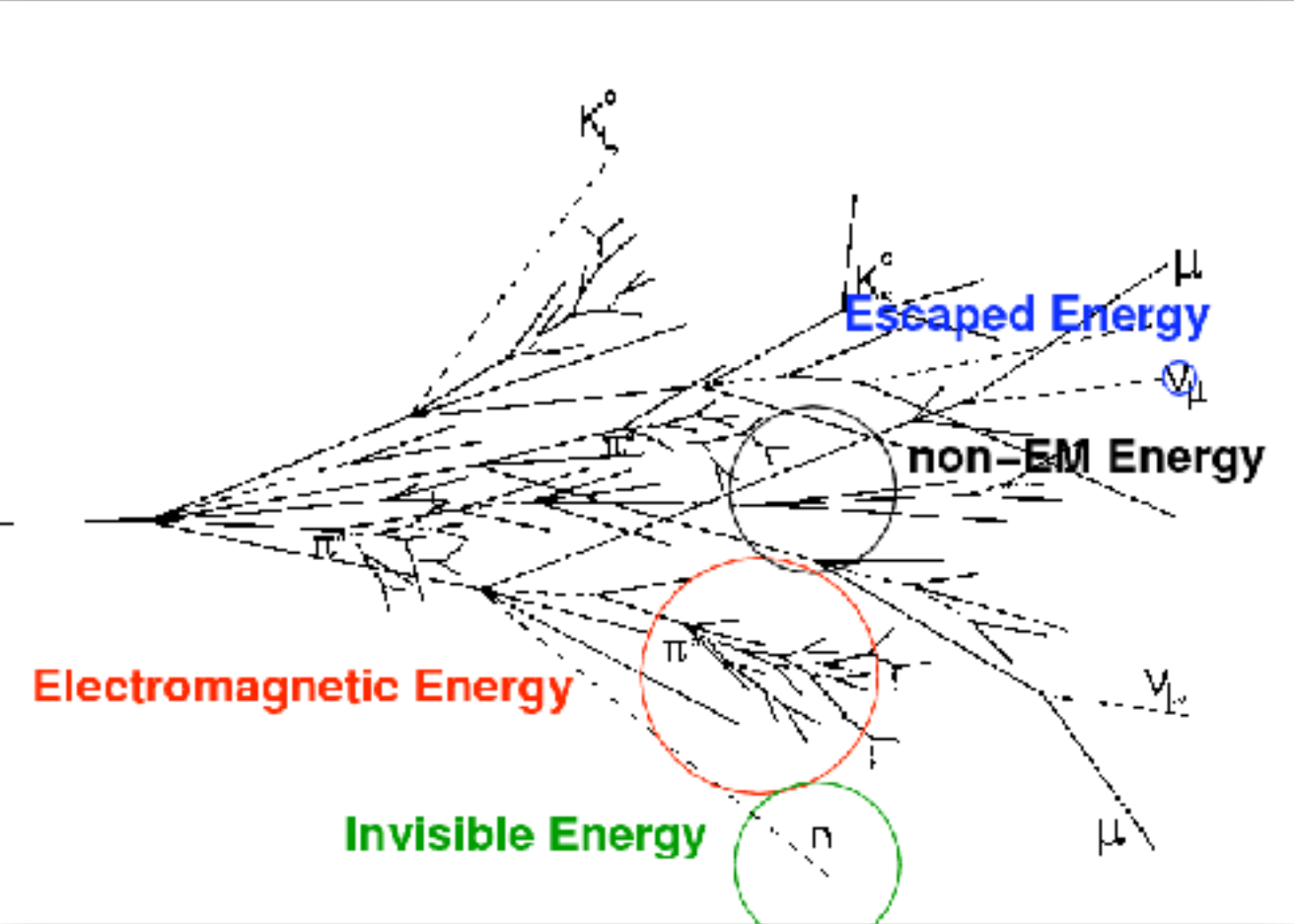
Timing Analysis Overview



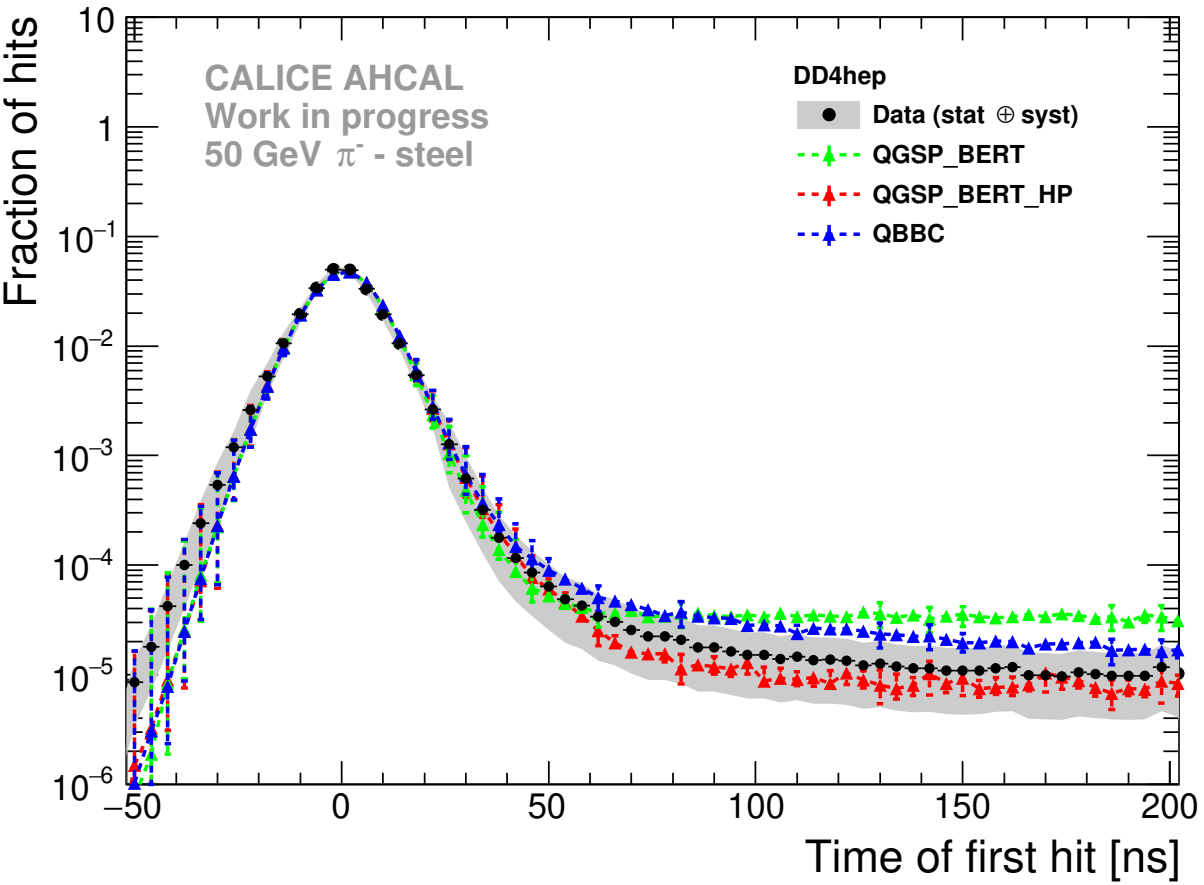
Timing Analysis Overview



CALICE Timing

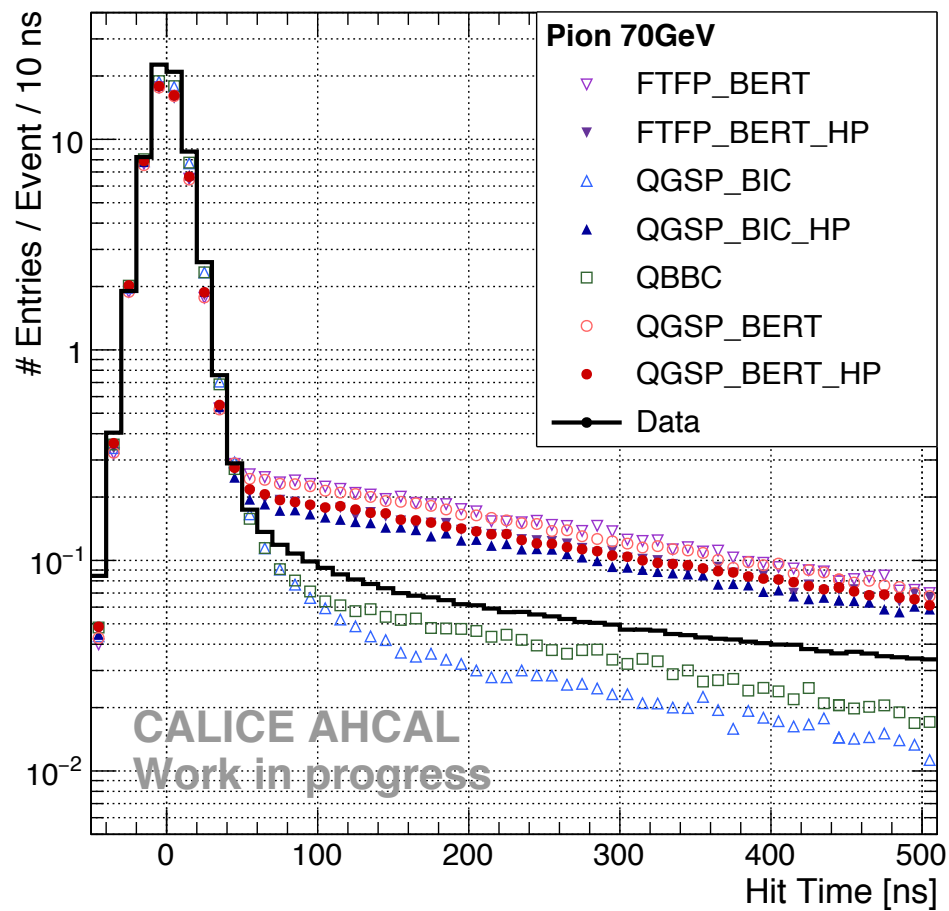


steel

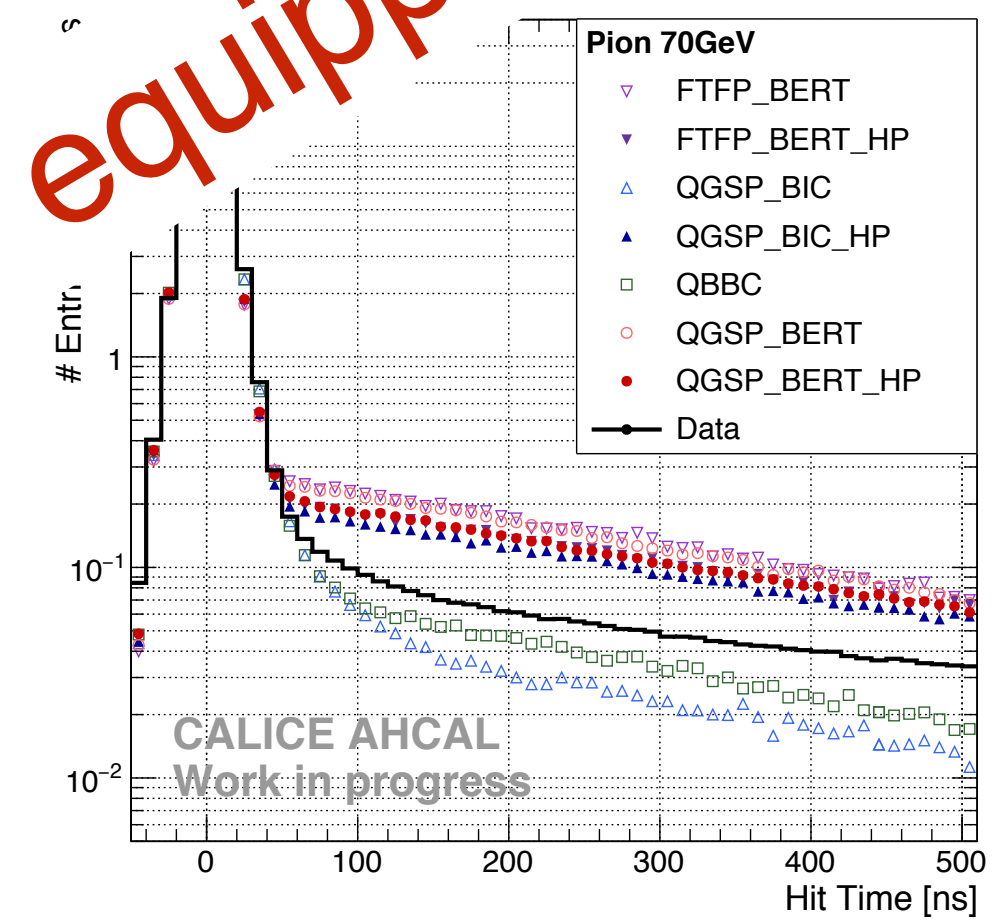
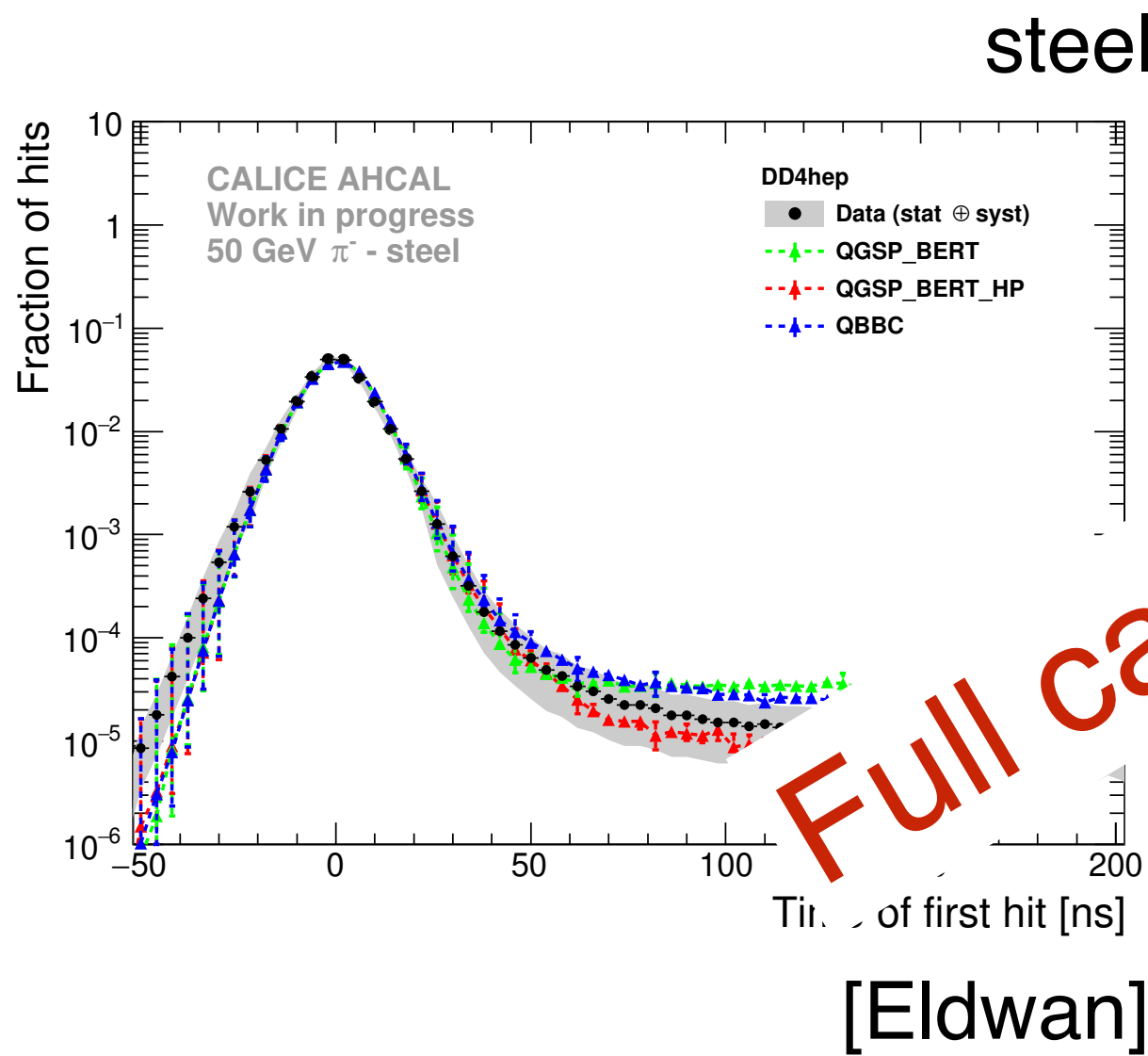
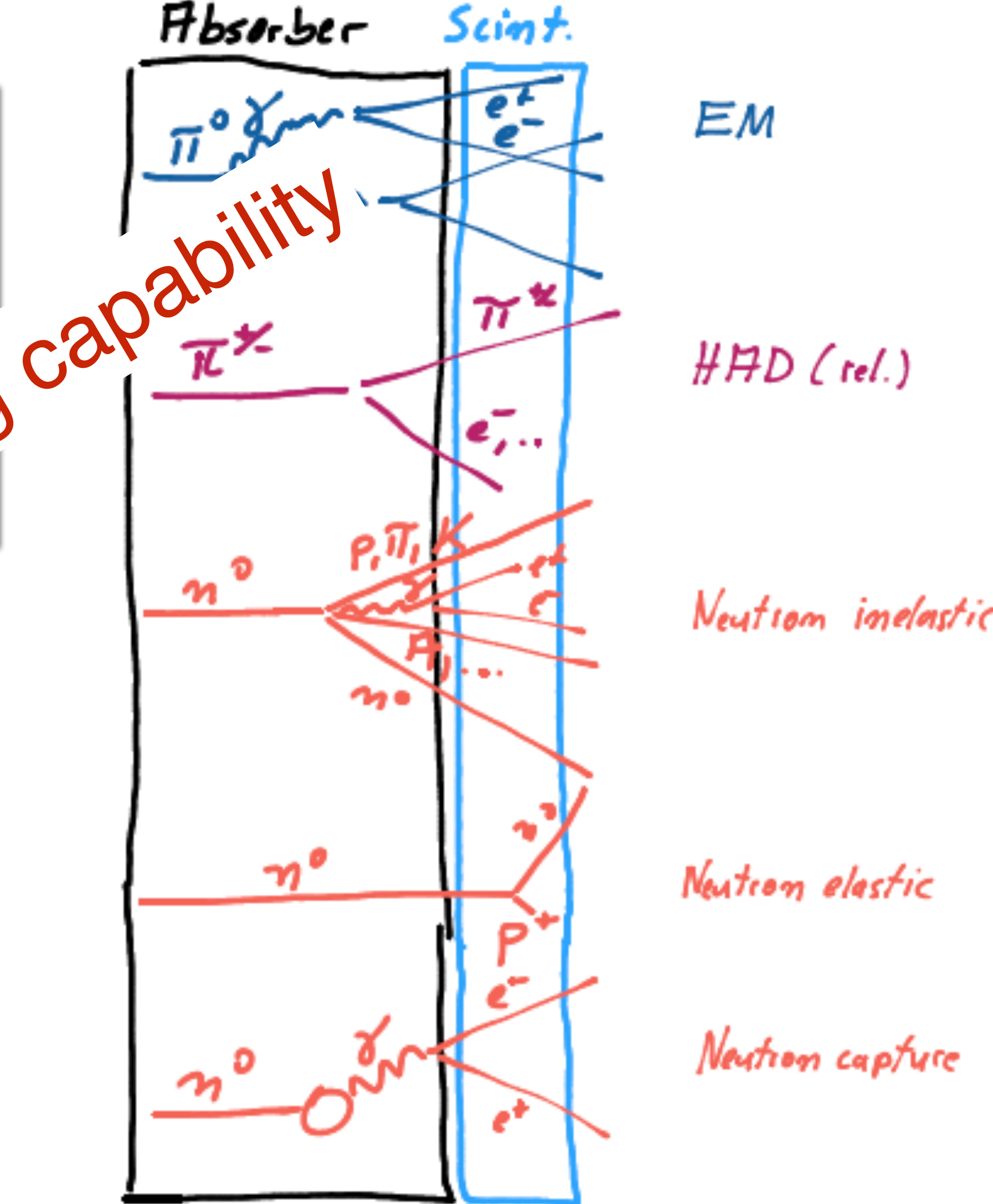
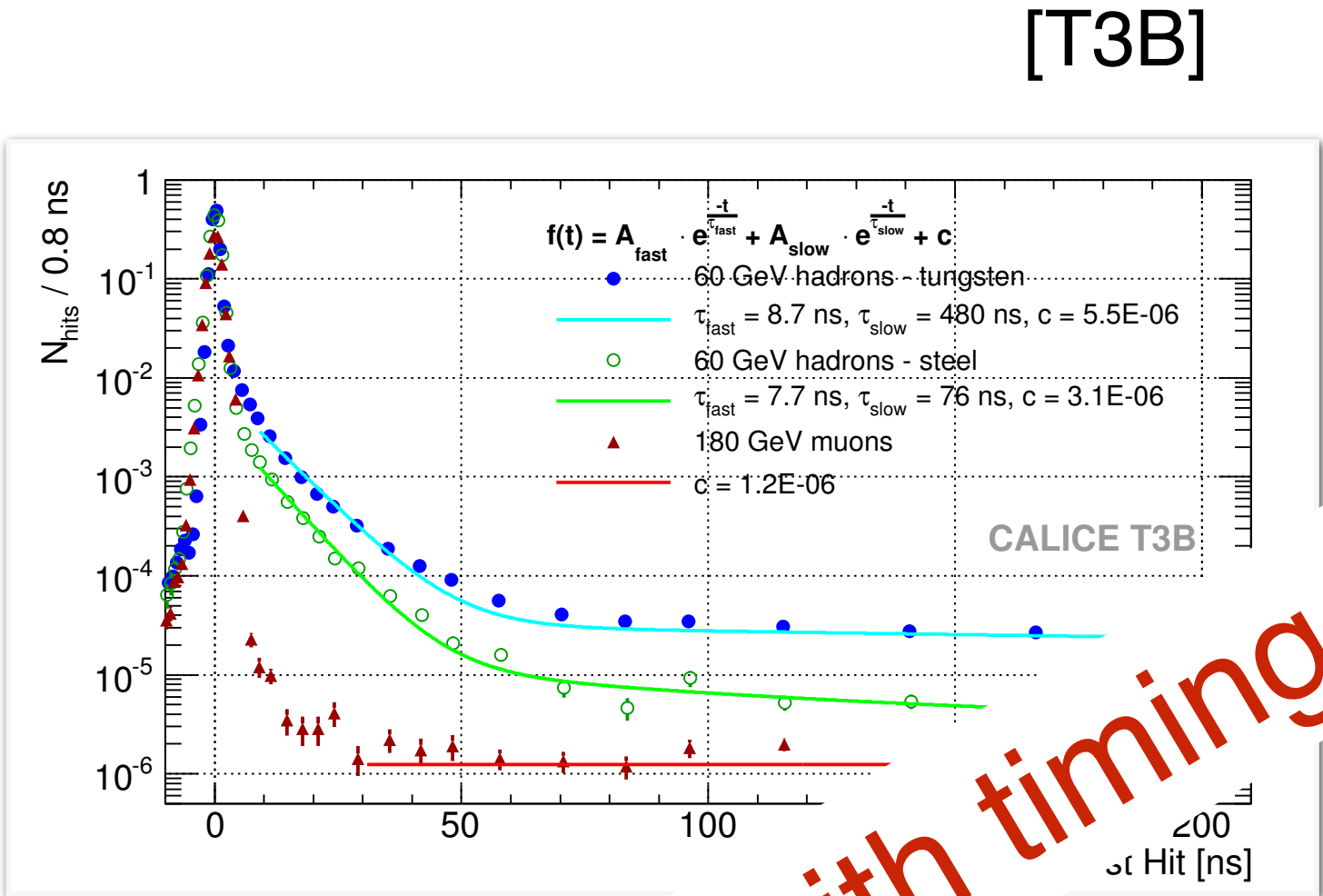
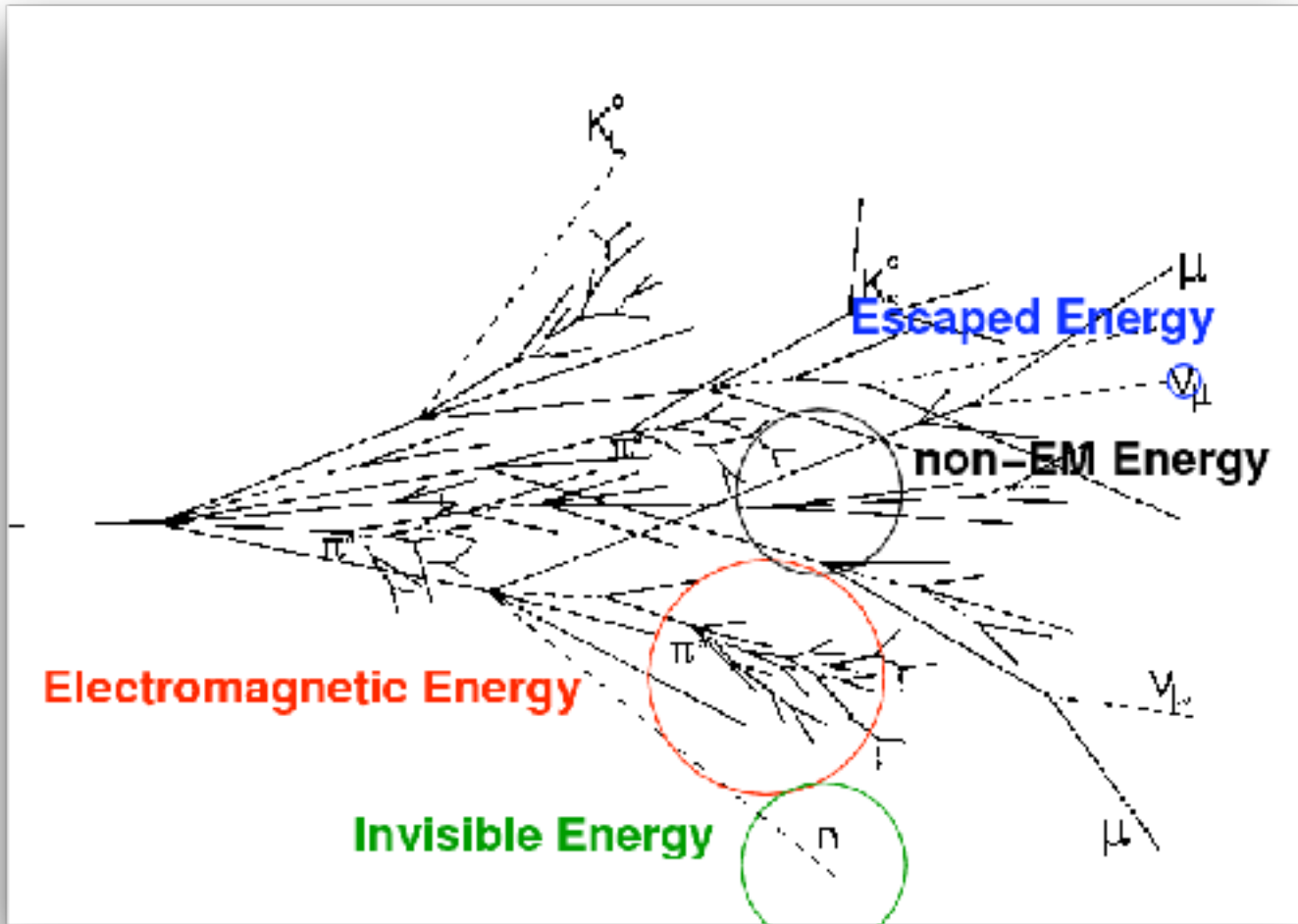


[Eldwan]

tungsten

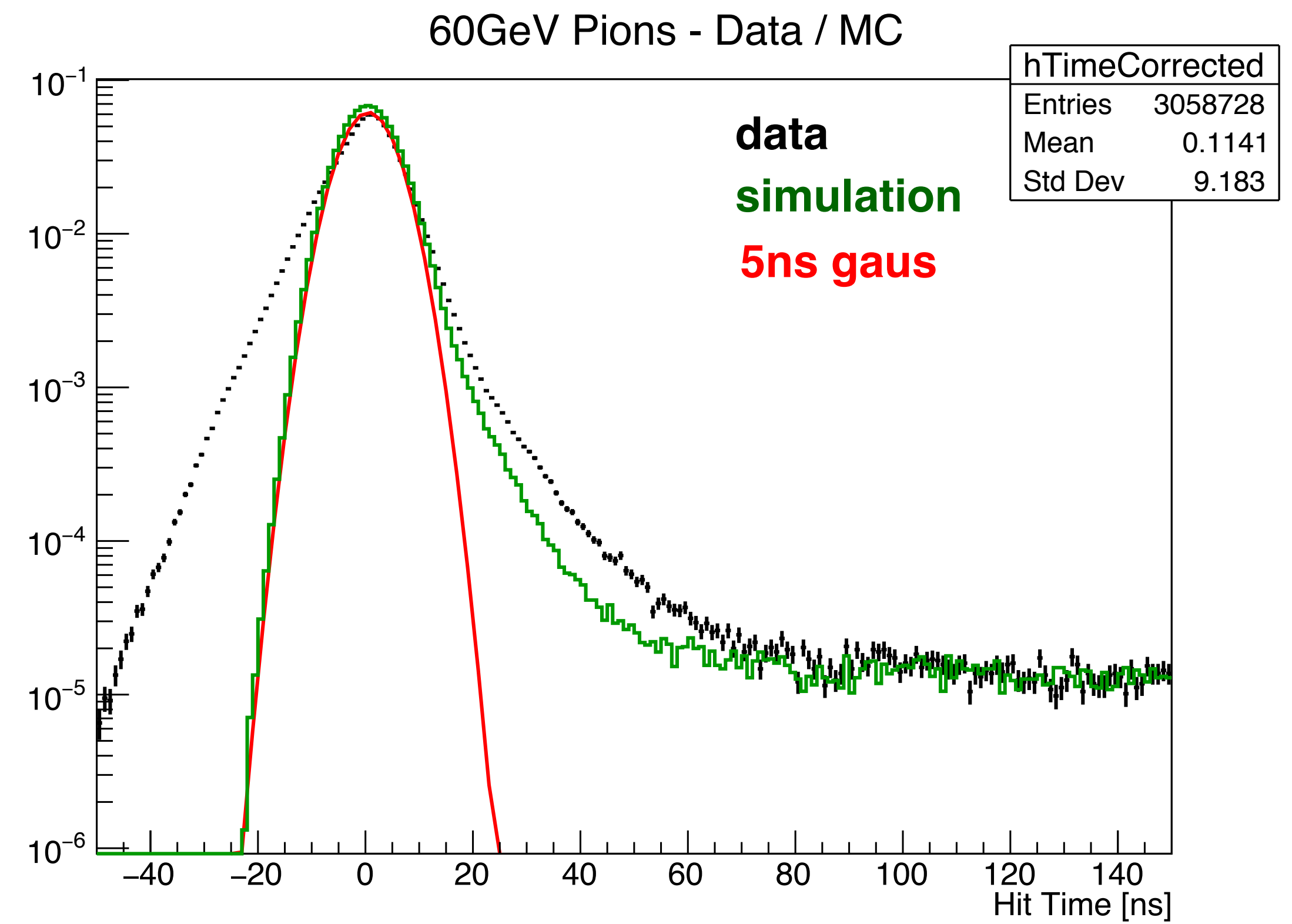
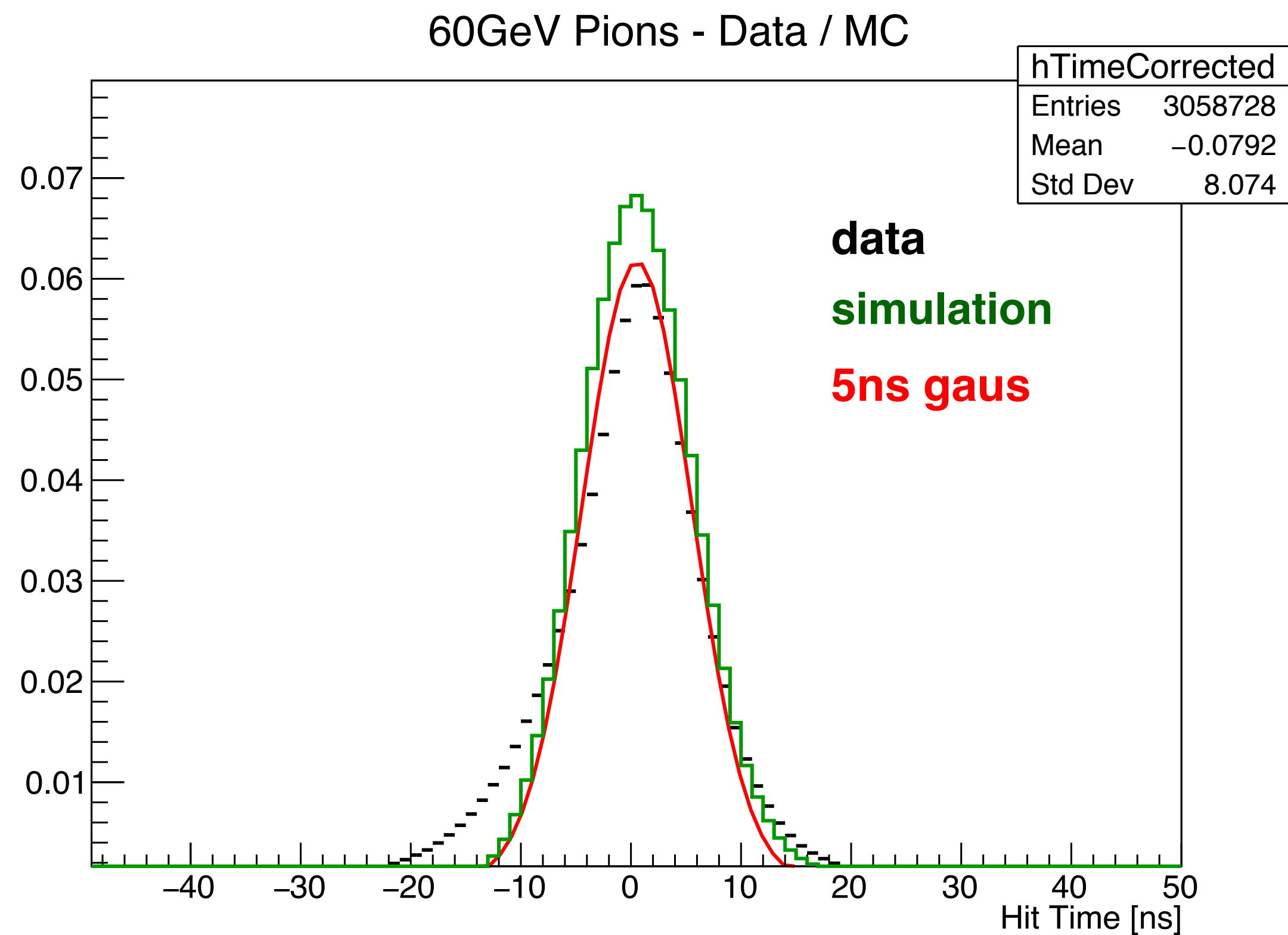


CALICE Timing

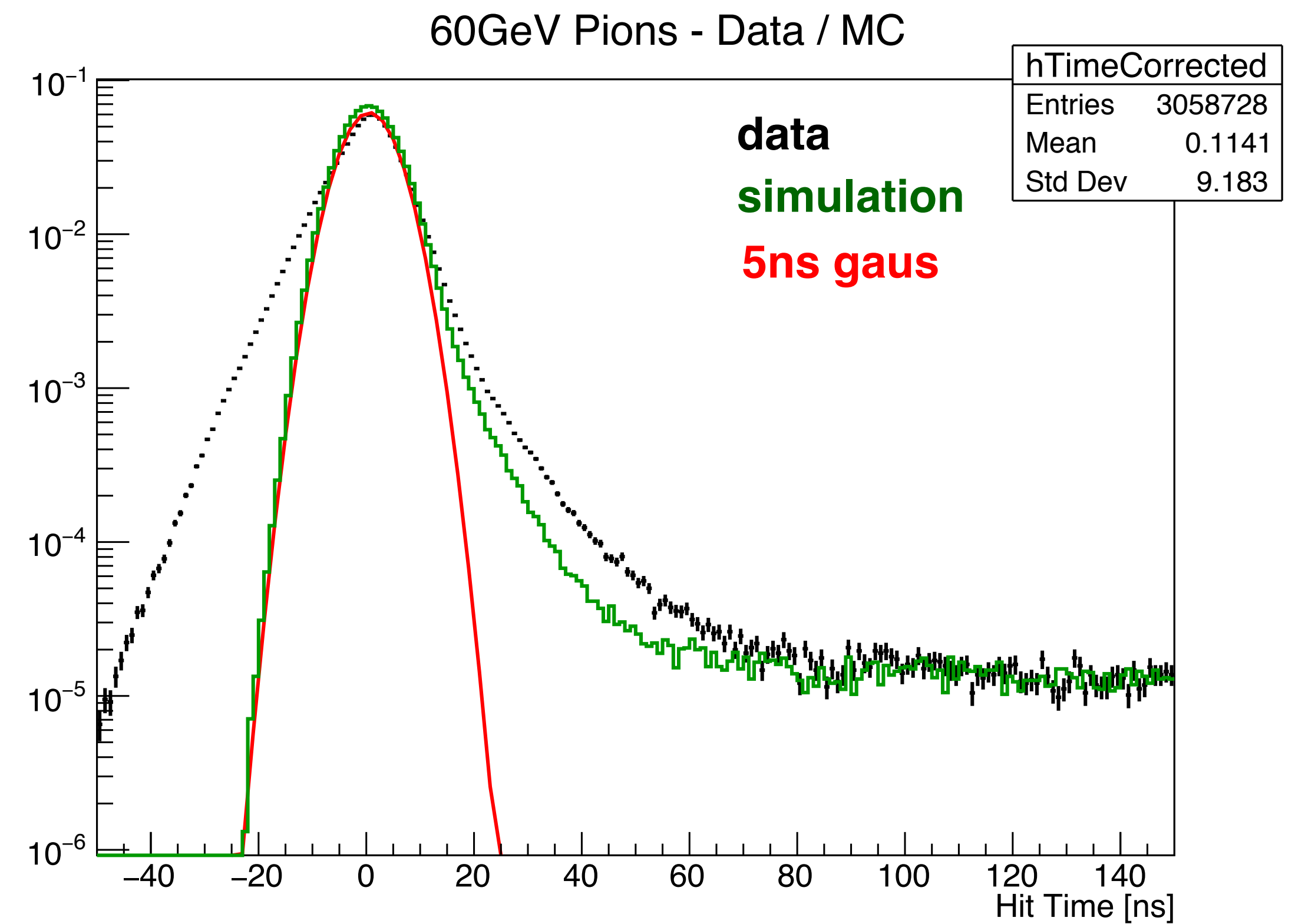
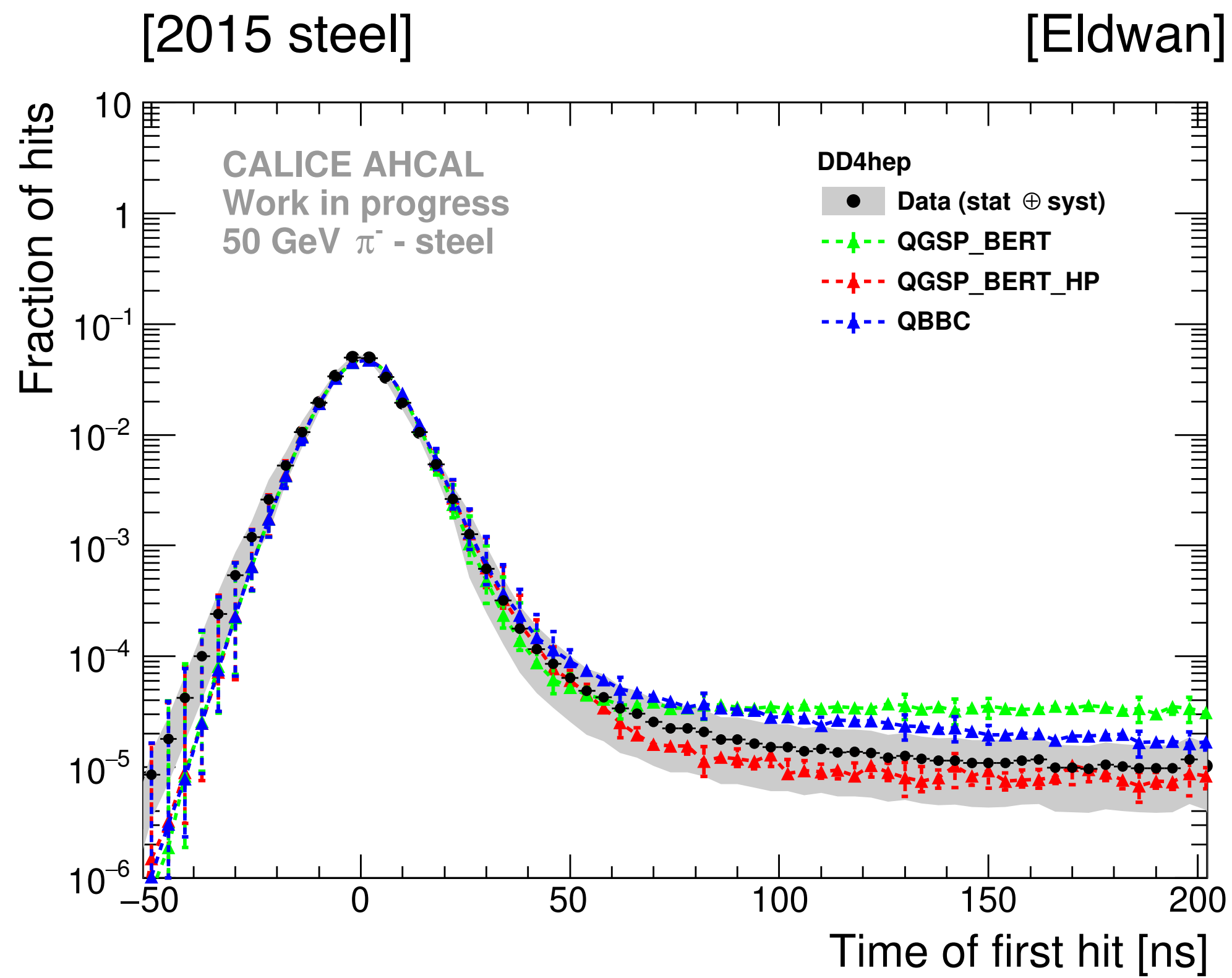


Full calorimeter equipped with timing capability

Pion Time Resolution



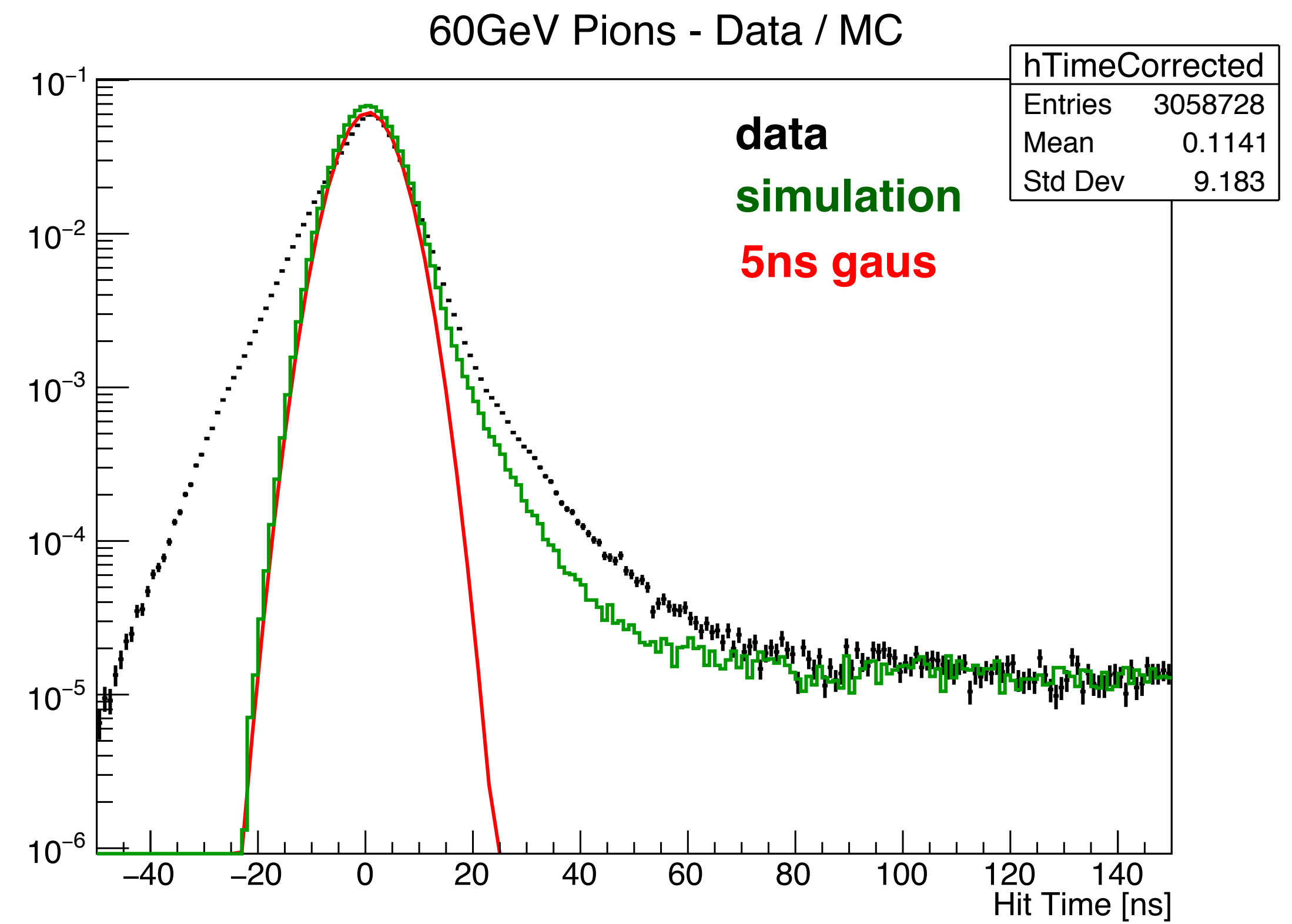
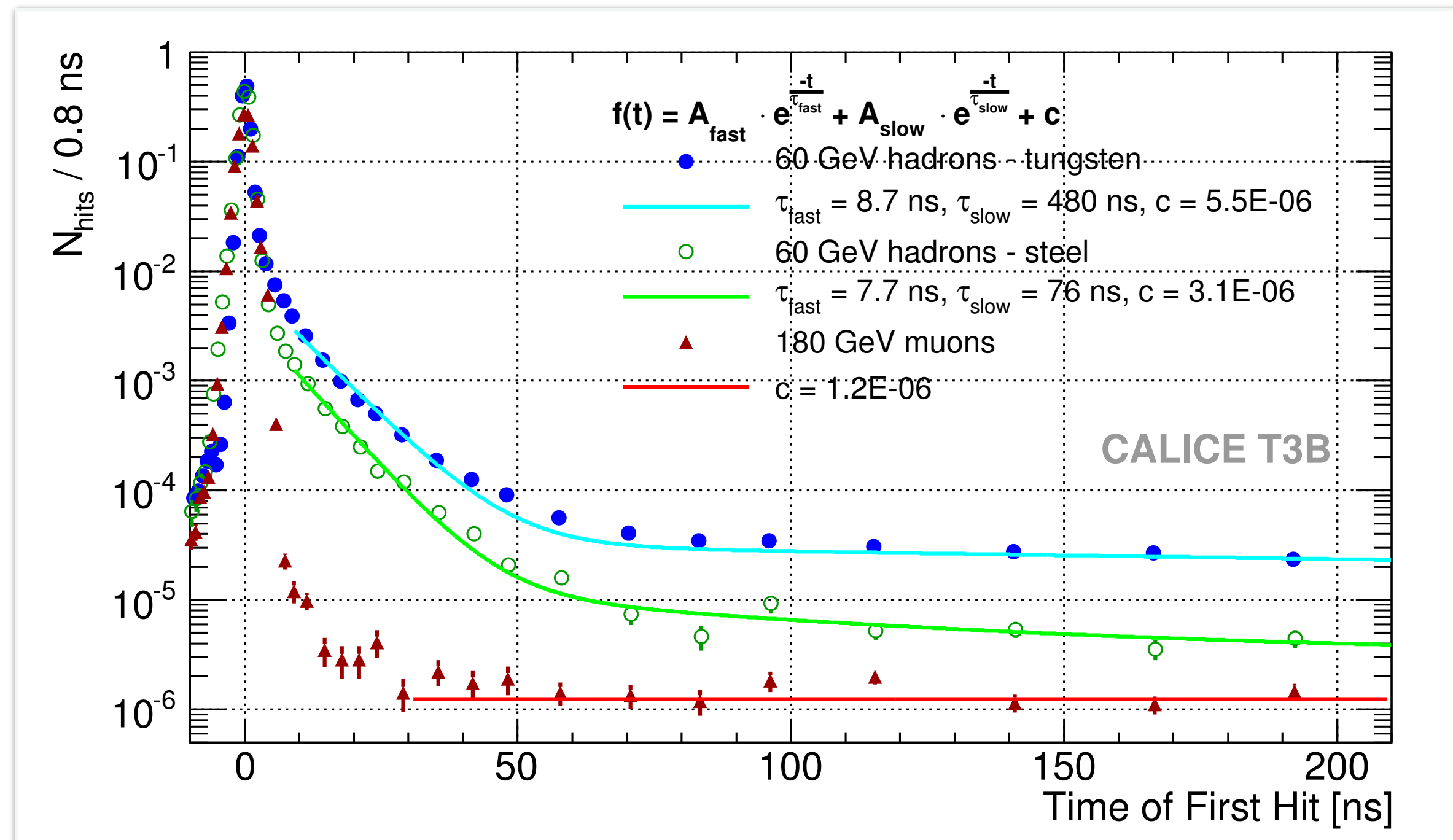
Pion Time Resolution



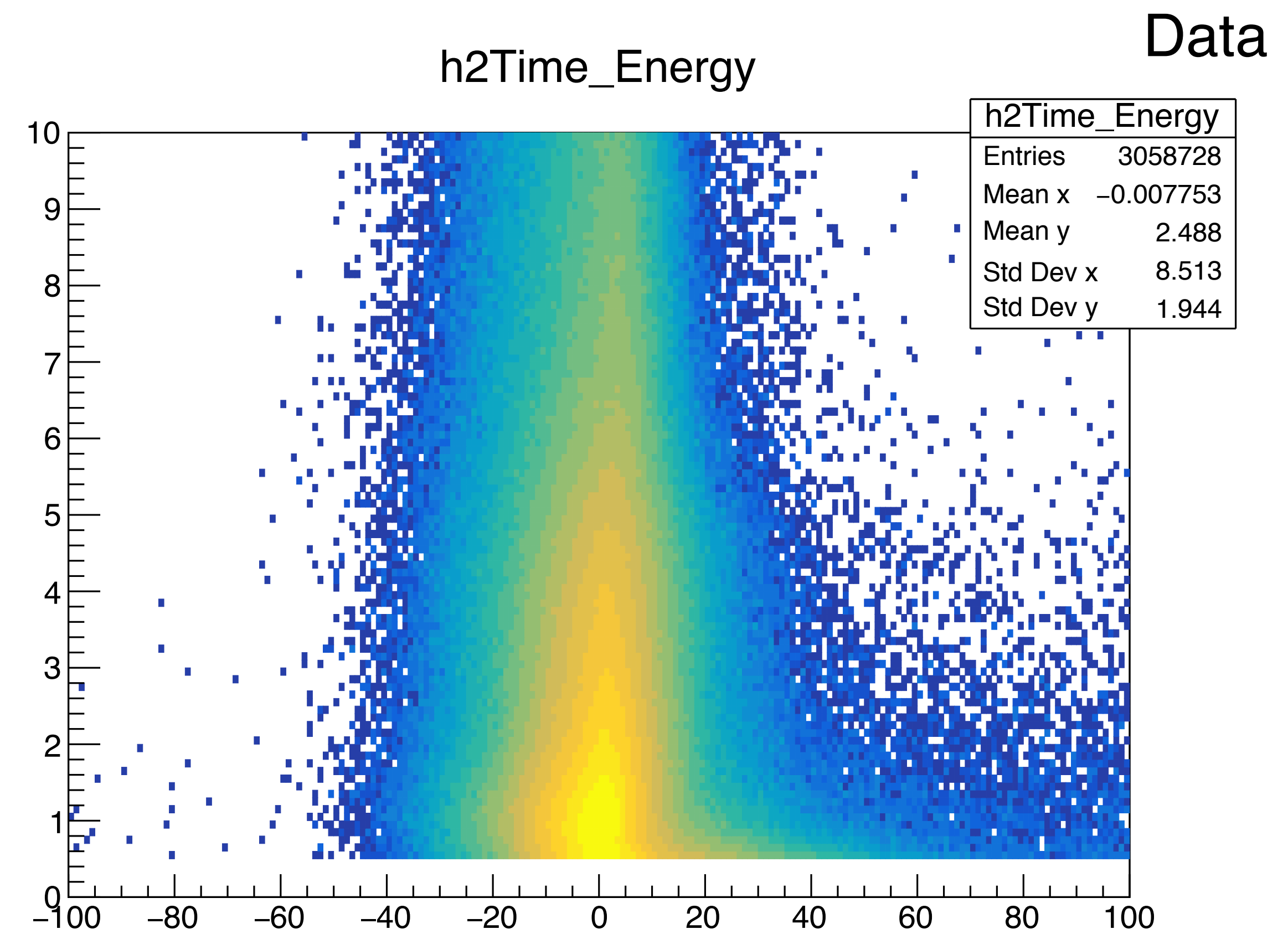
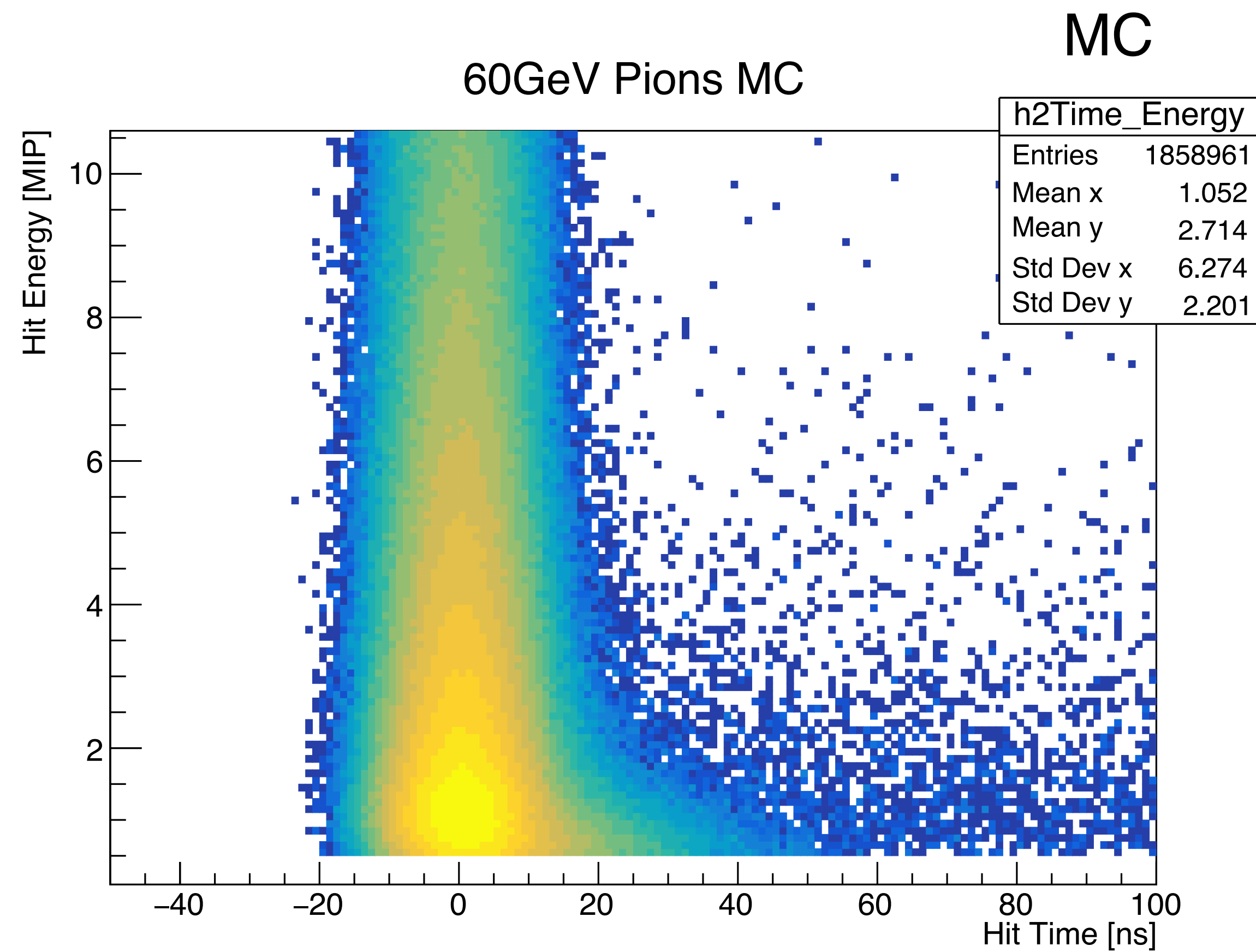
Pion Time Resolution



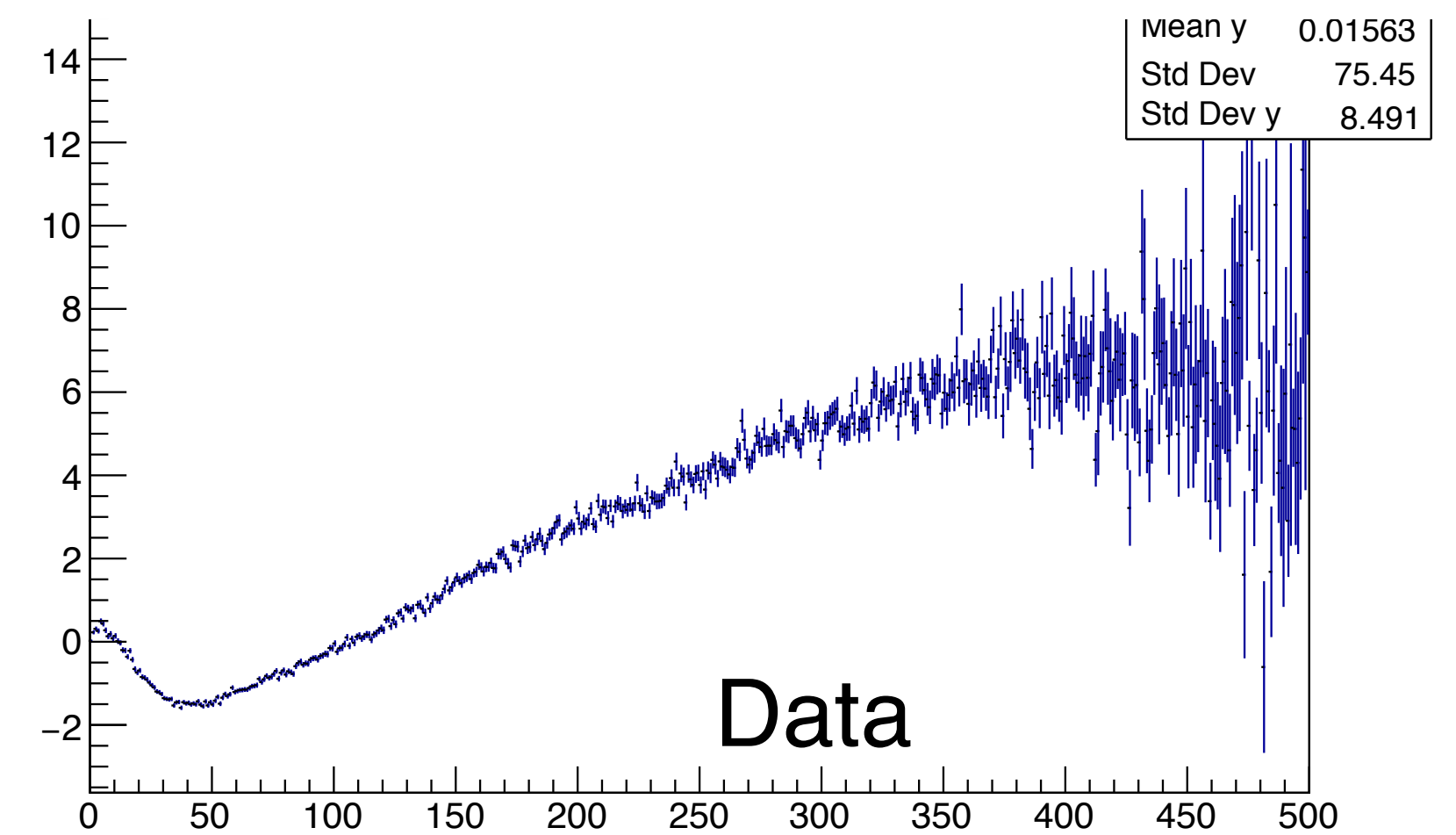
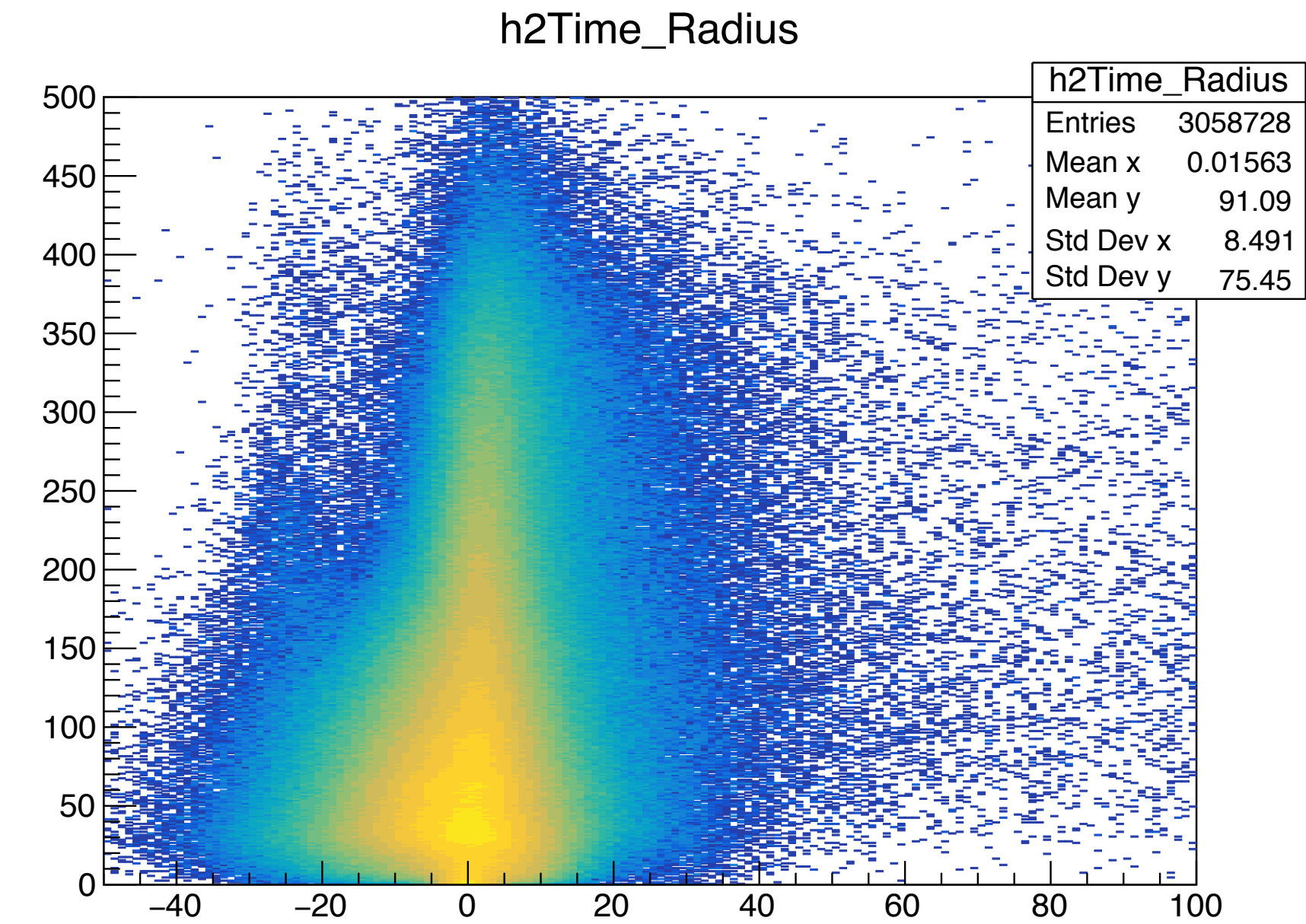
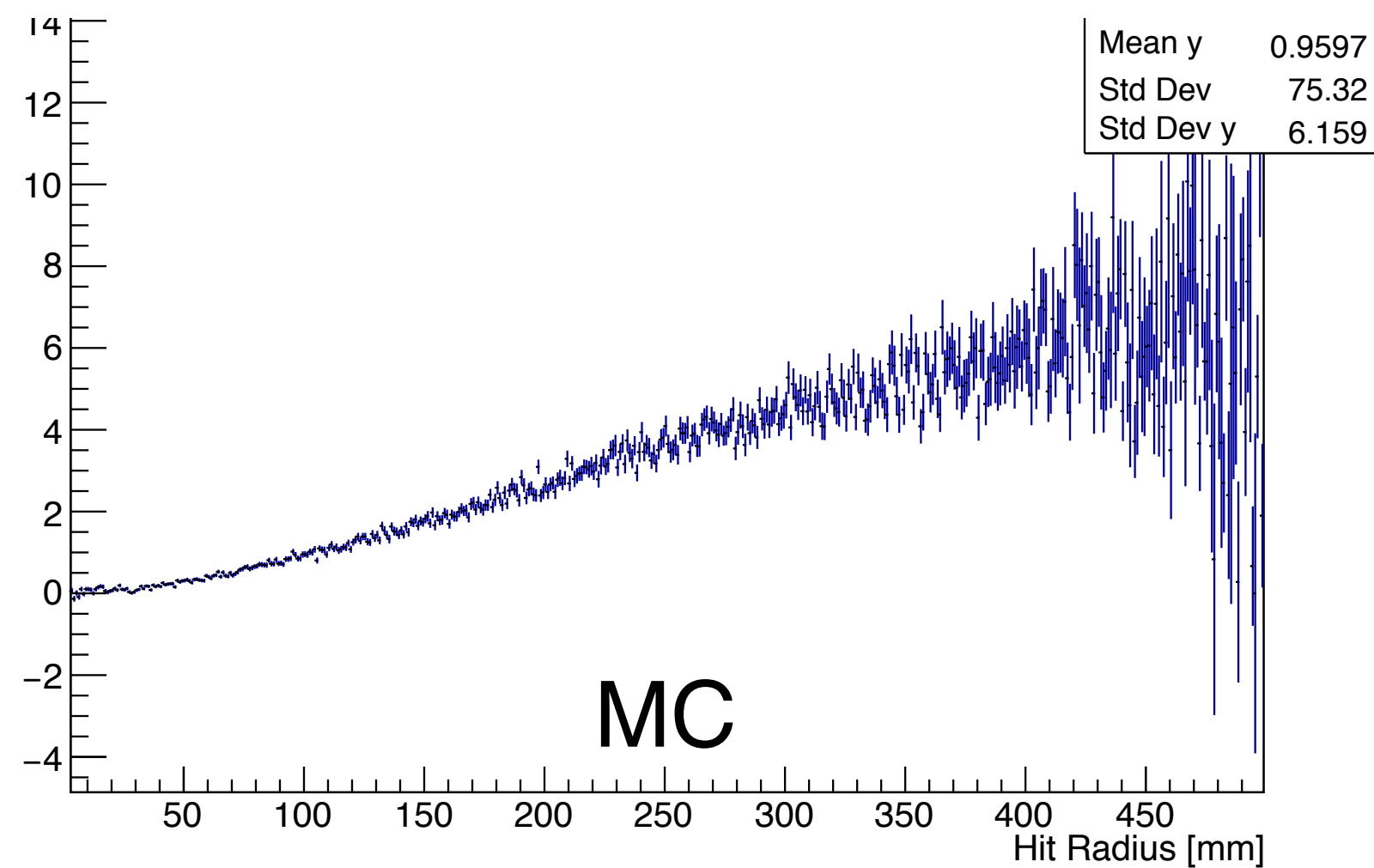
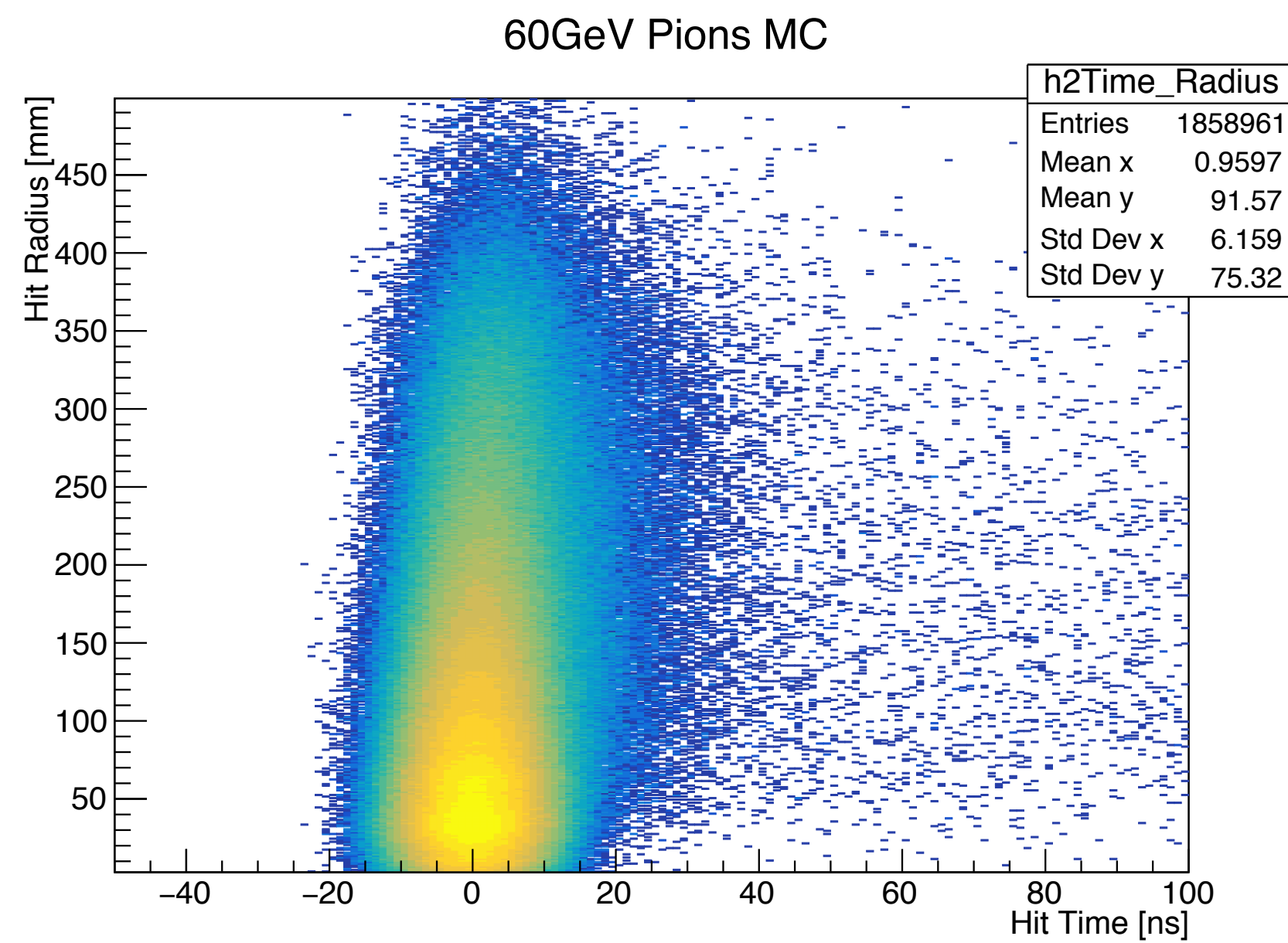
[T3B]



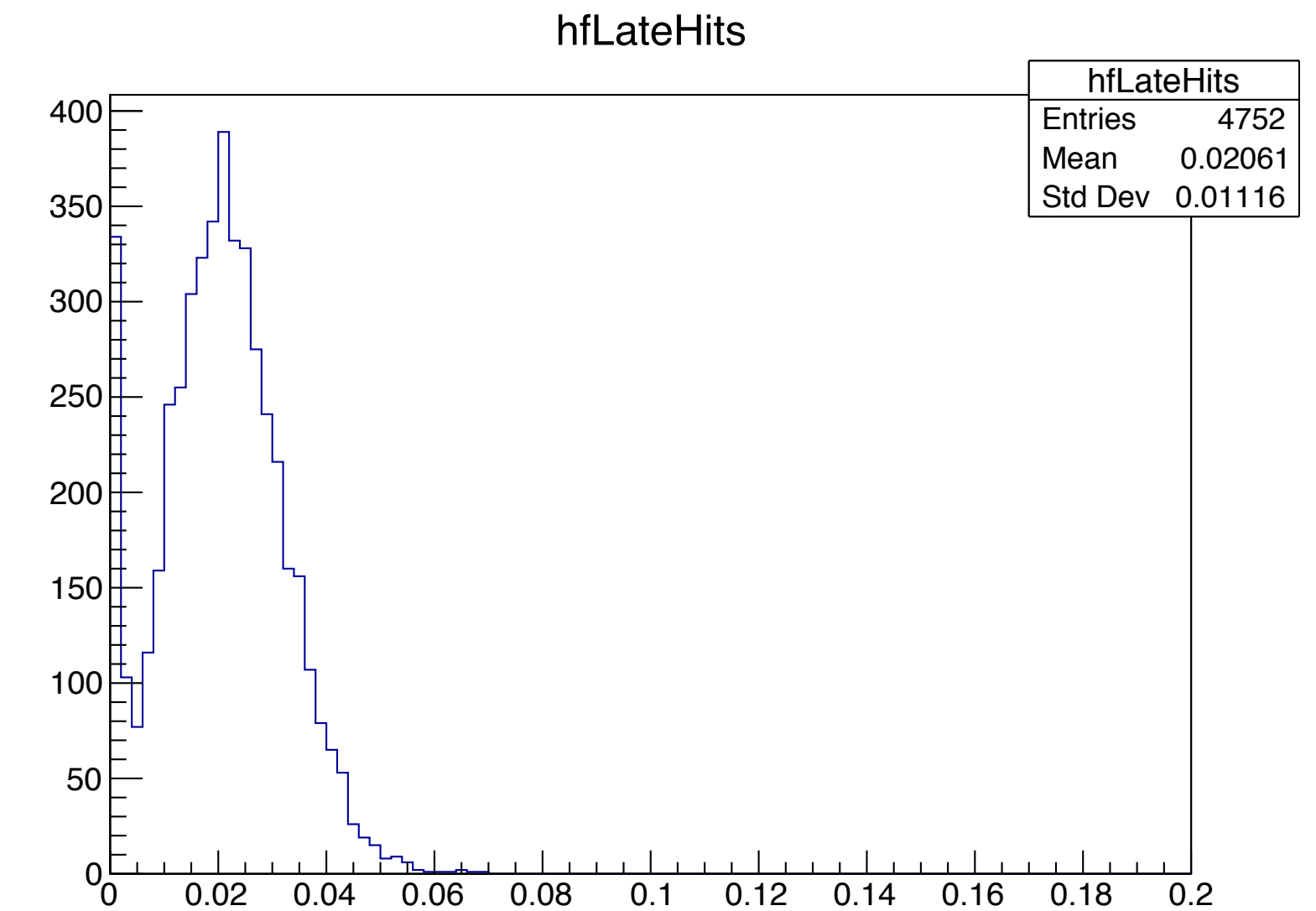
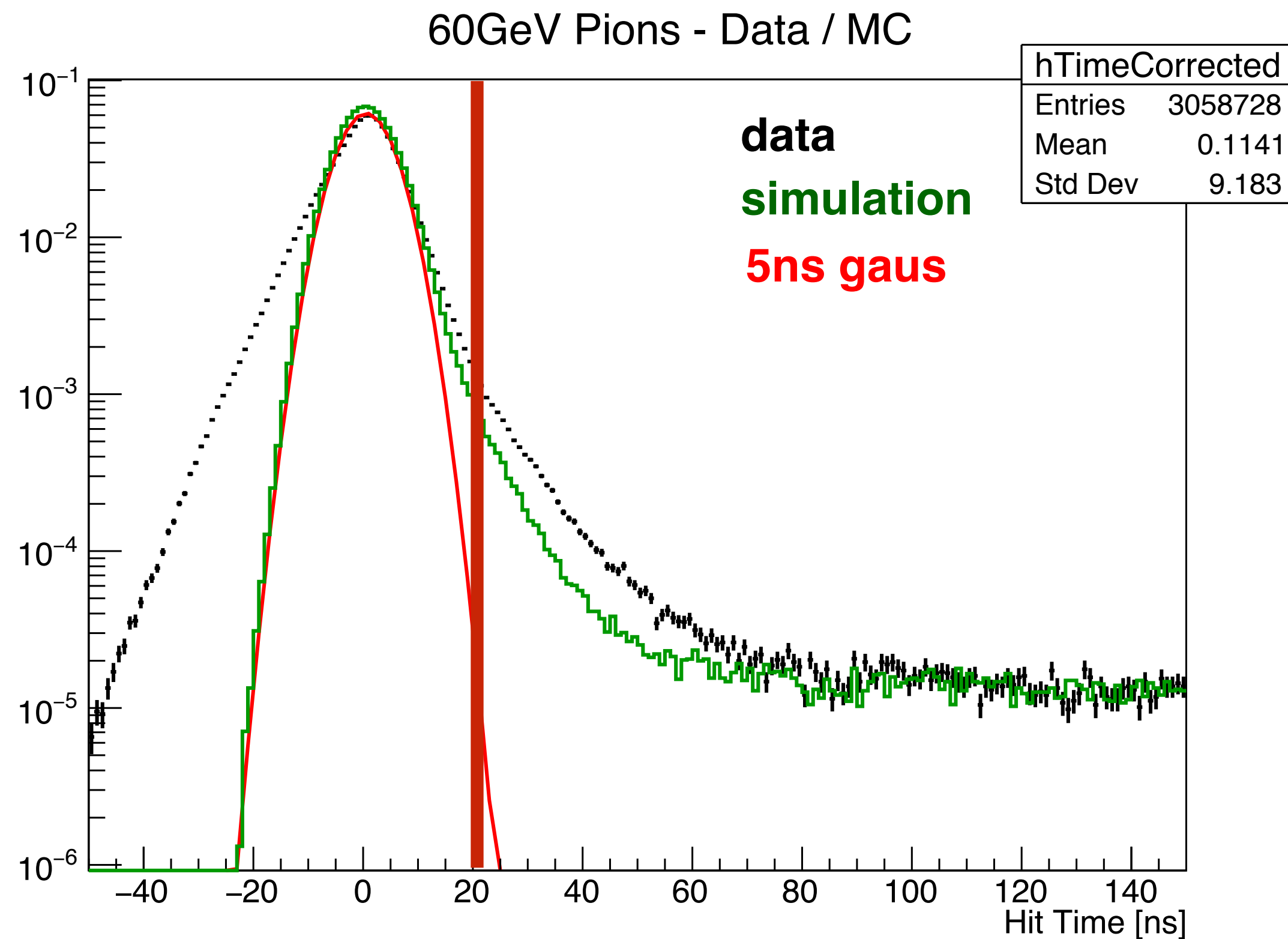
Time vs Energy



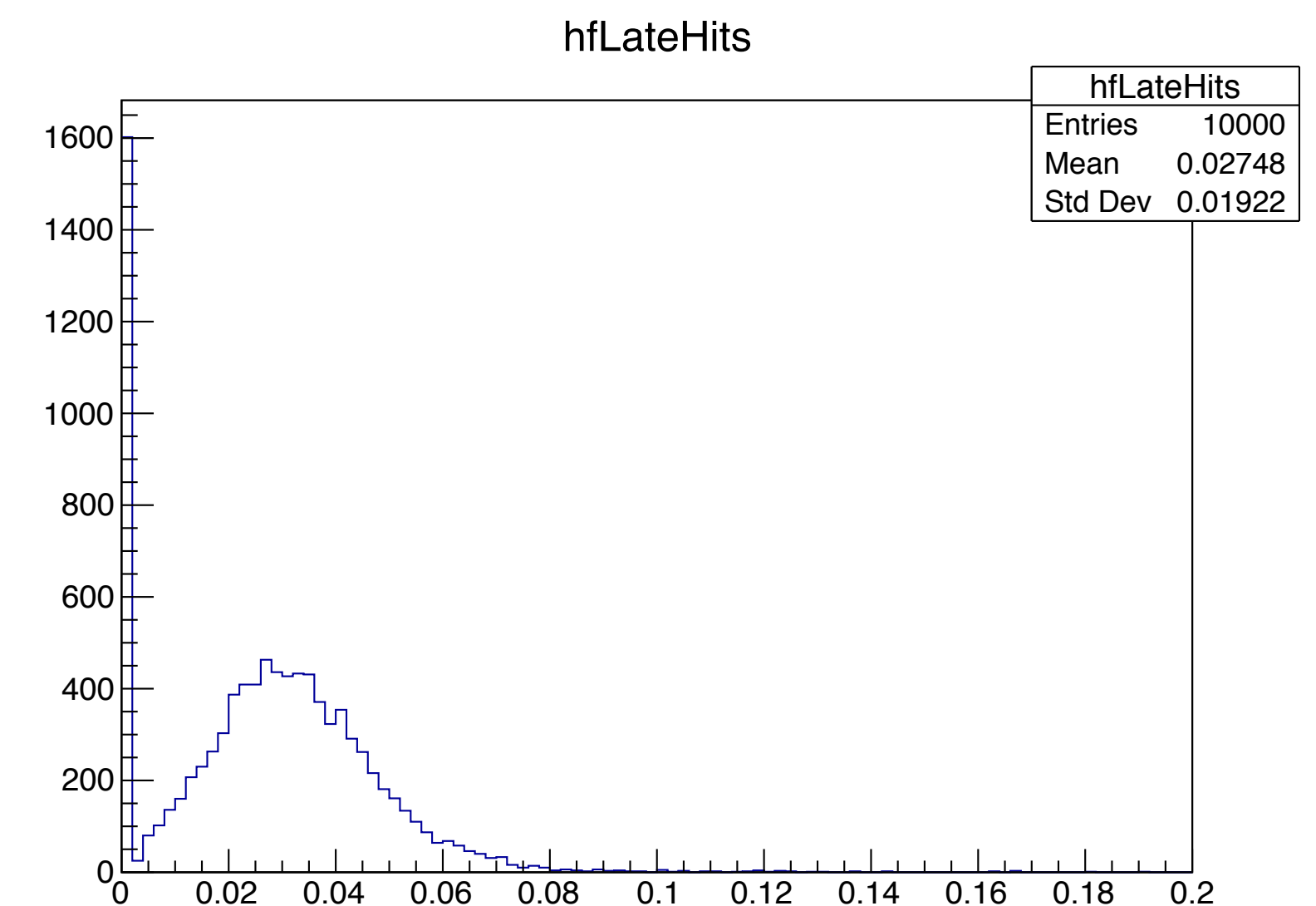
Time vs Radius



Fraction of Late Hits

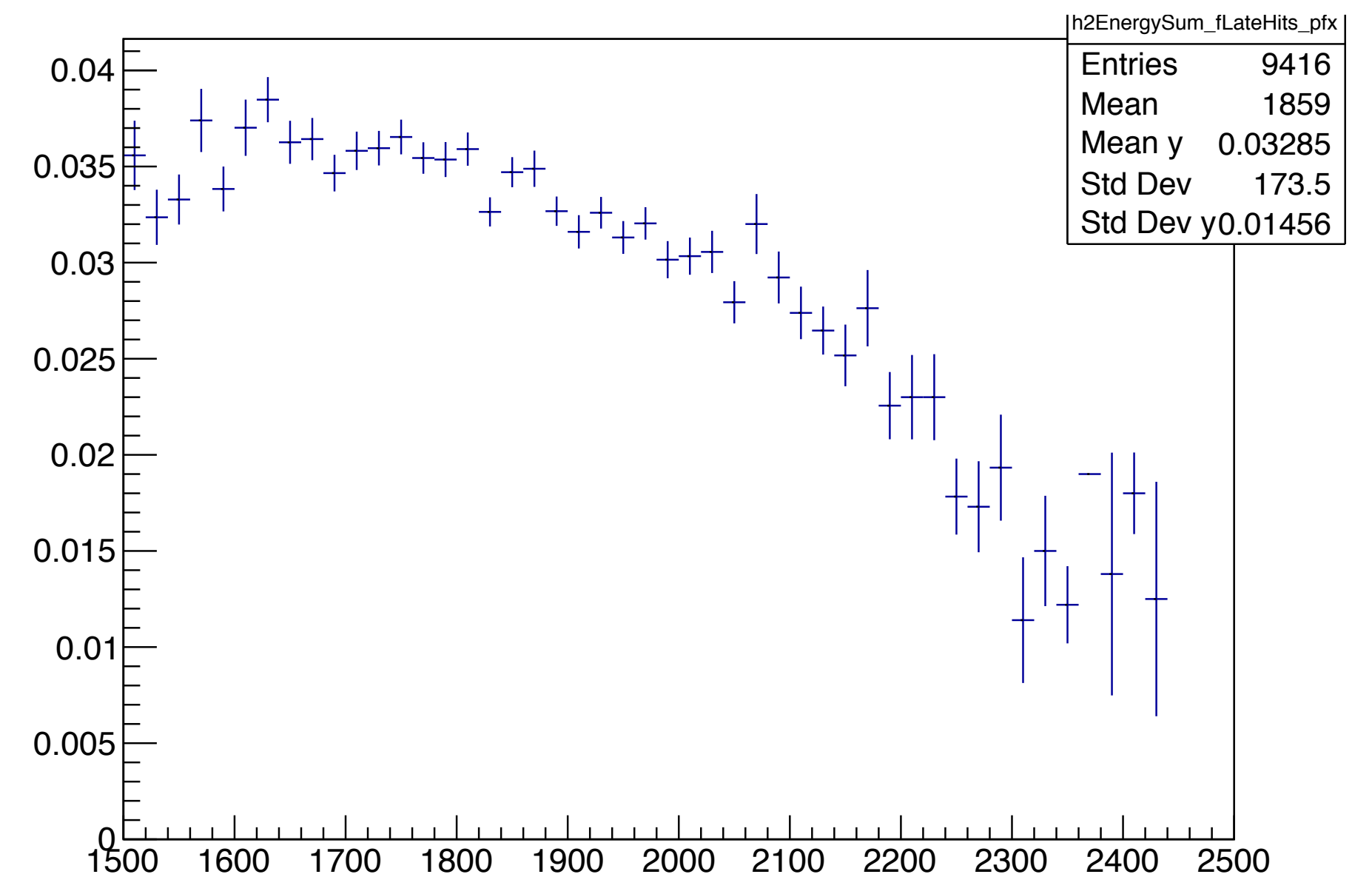
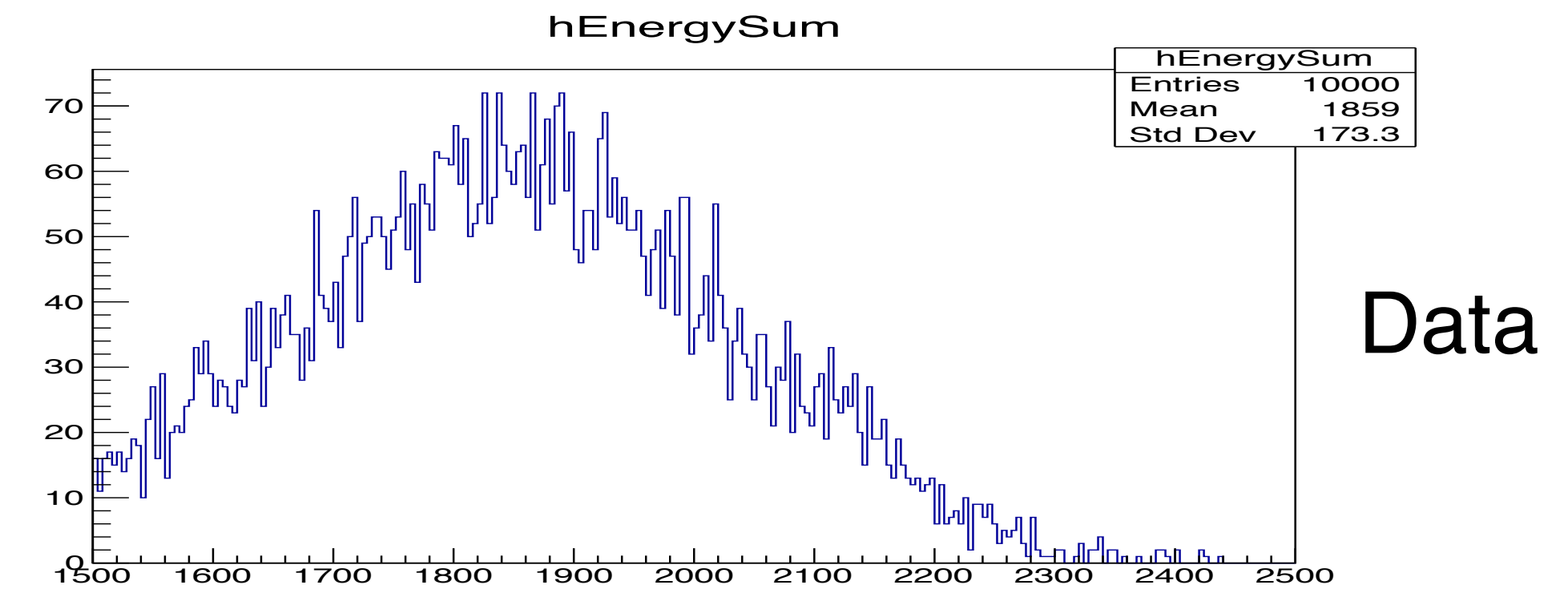
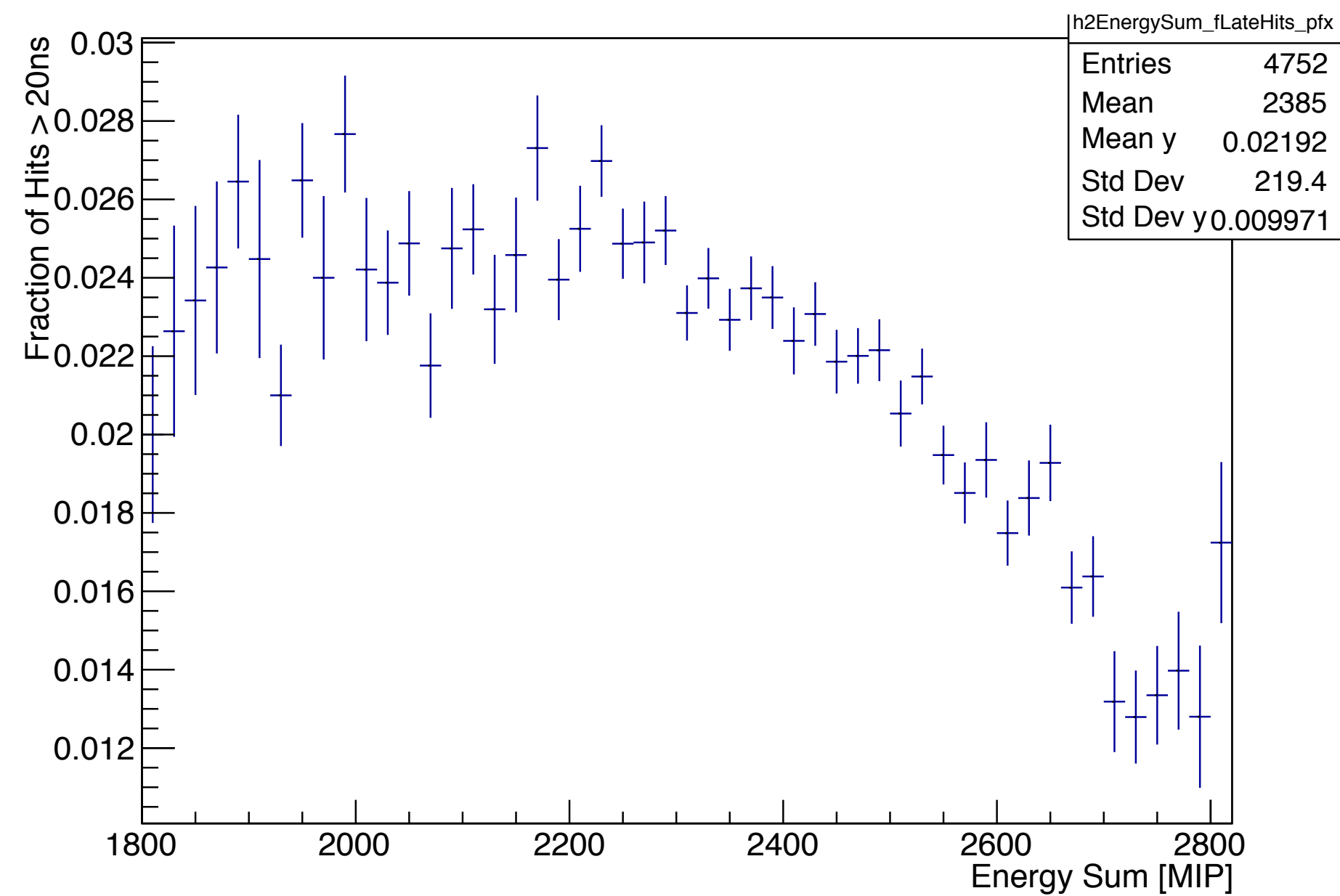
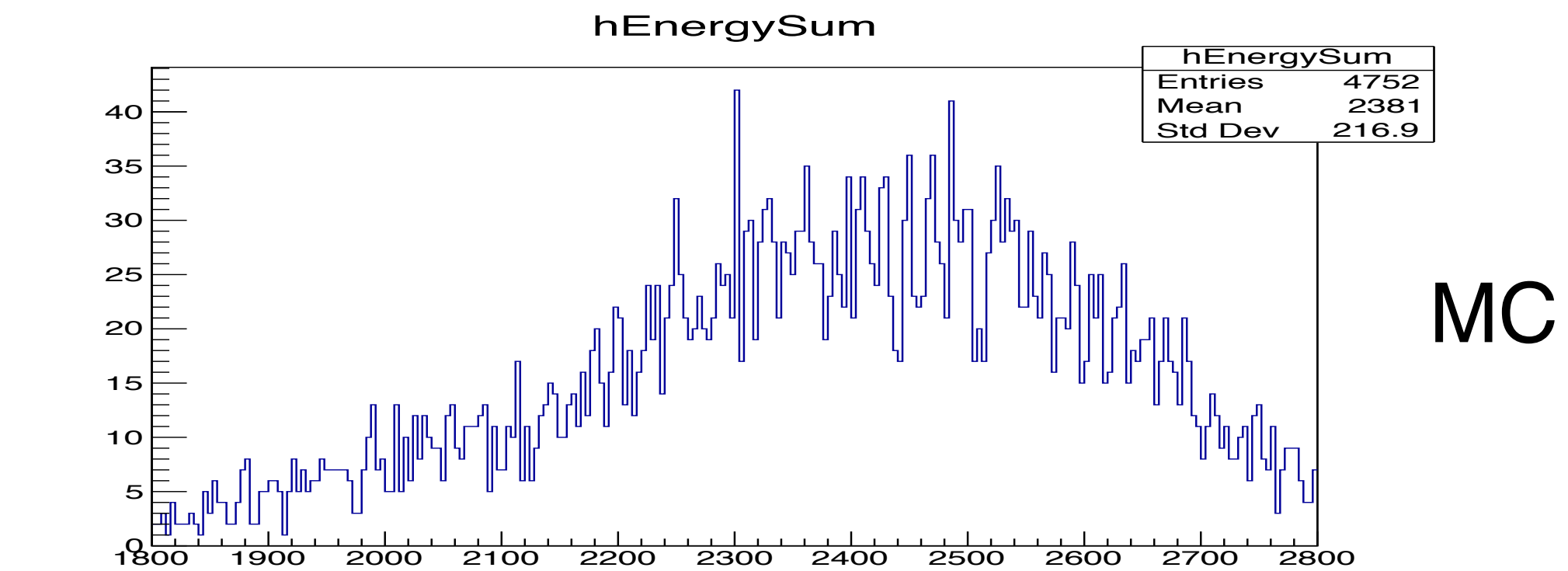


MC

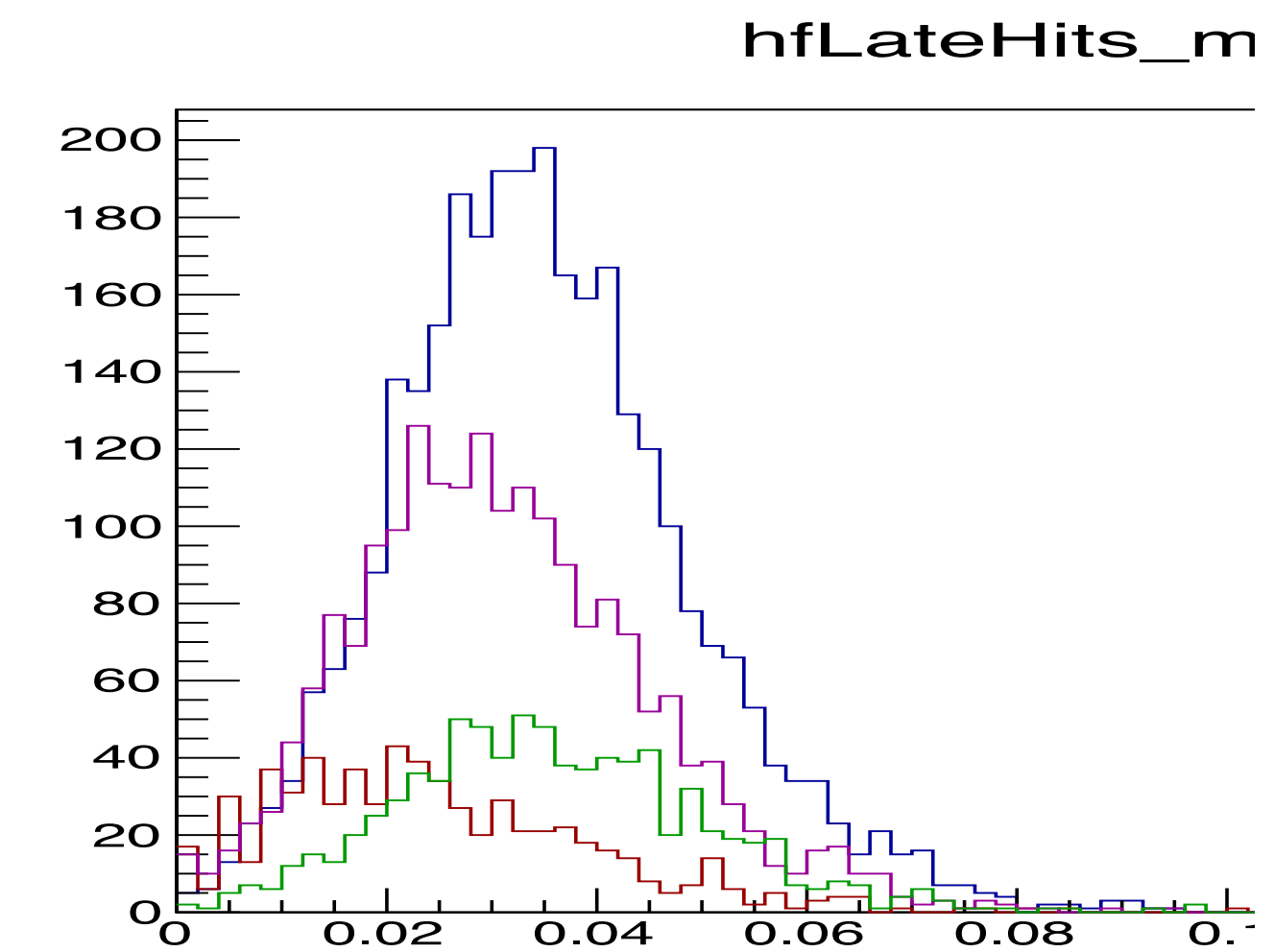
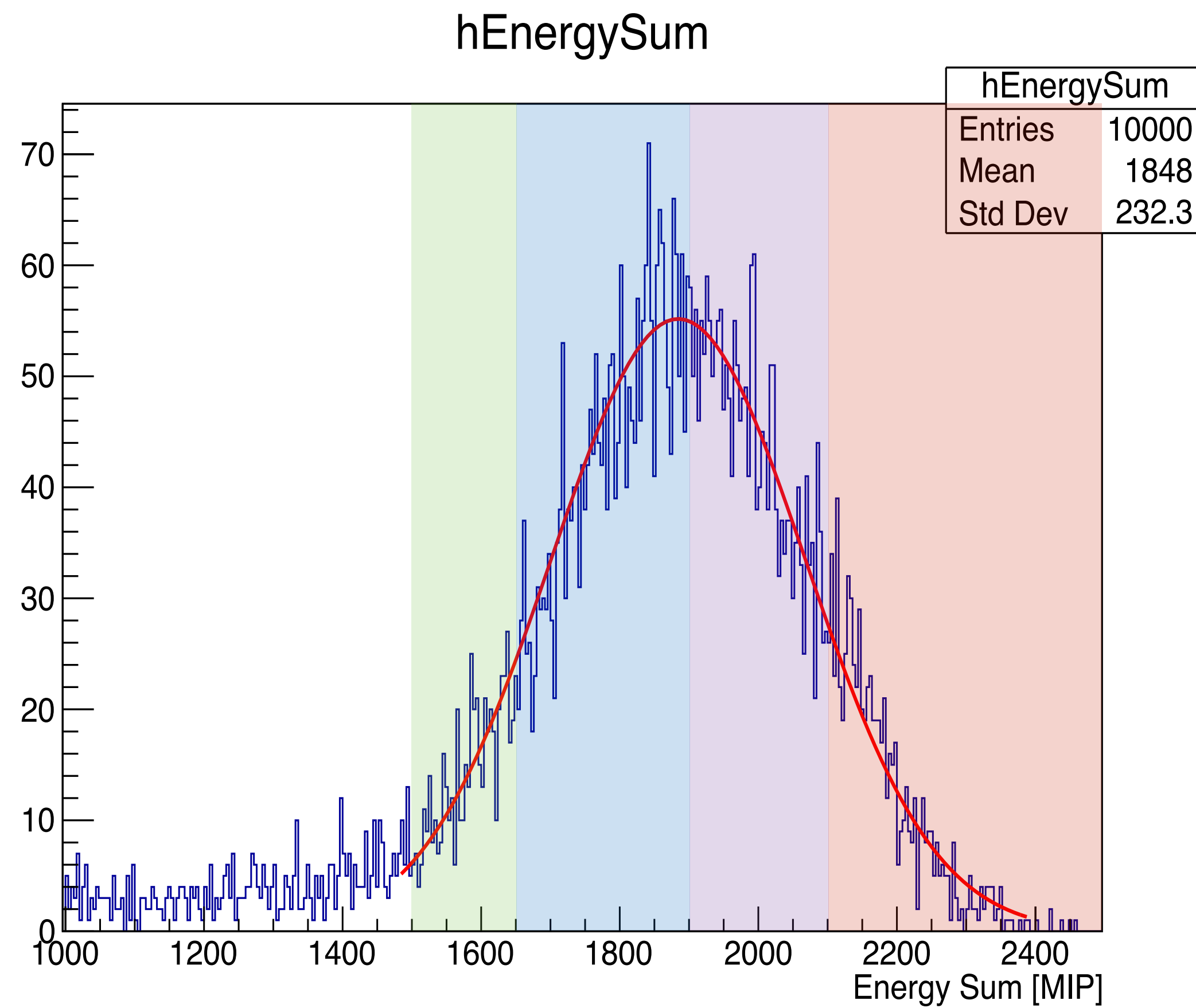


Data

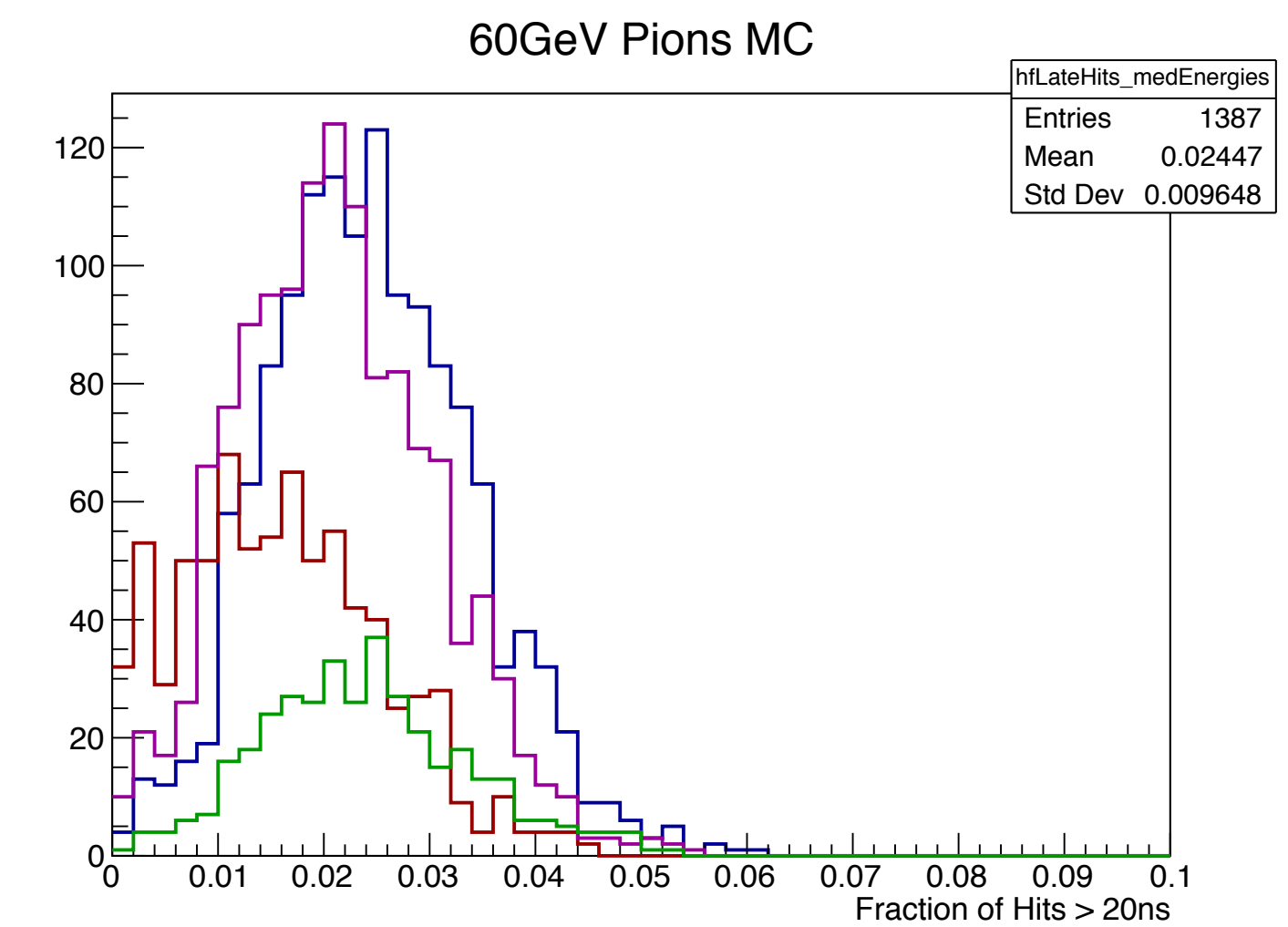
Fraction of Late Hits



Pion Time Resolution



MC



Data

- **We are still at the beginning of the time analysis!**
- Many features to check
- For every serious analysis: proper calibration / event selection
- But: time resolution already in the same ball park as for 2015 test beam
- Pions comparison between data and MC looks reasonable at current state
- Correlation between late hits and energy sum visible in data & MC
—> handle for software compensation?