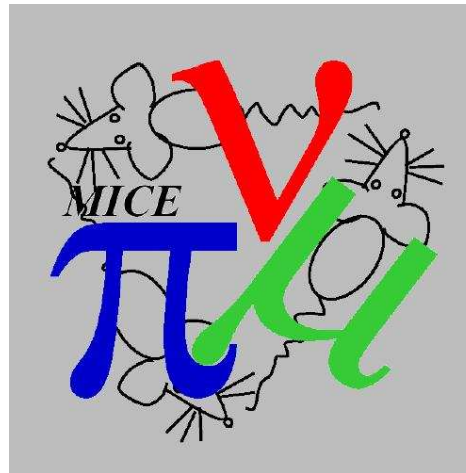


DOWNSTREAM TRACK DISTRIBUTIONS IN G4MICE

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Illinois Institute of Technology

MICE Collaboration Mtg - Oct 30, 2003 - Abingdon



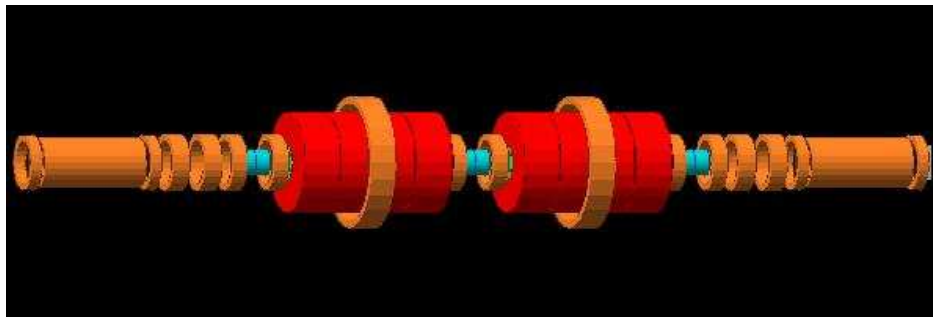
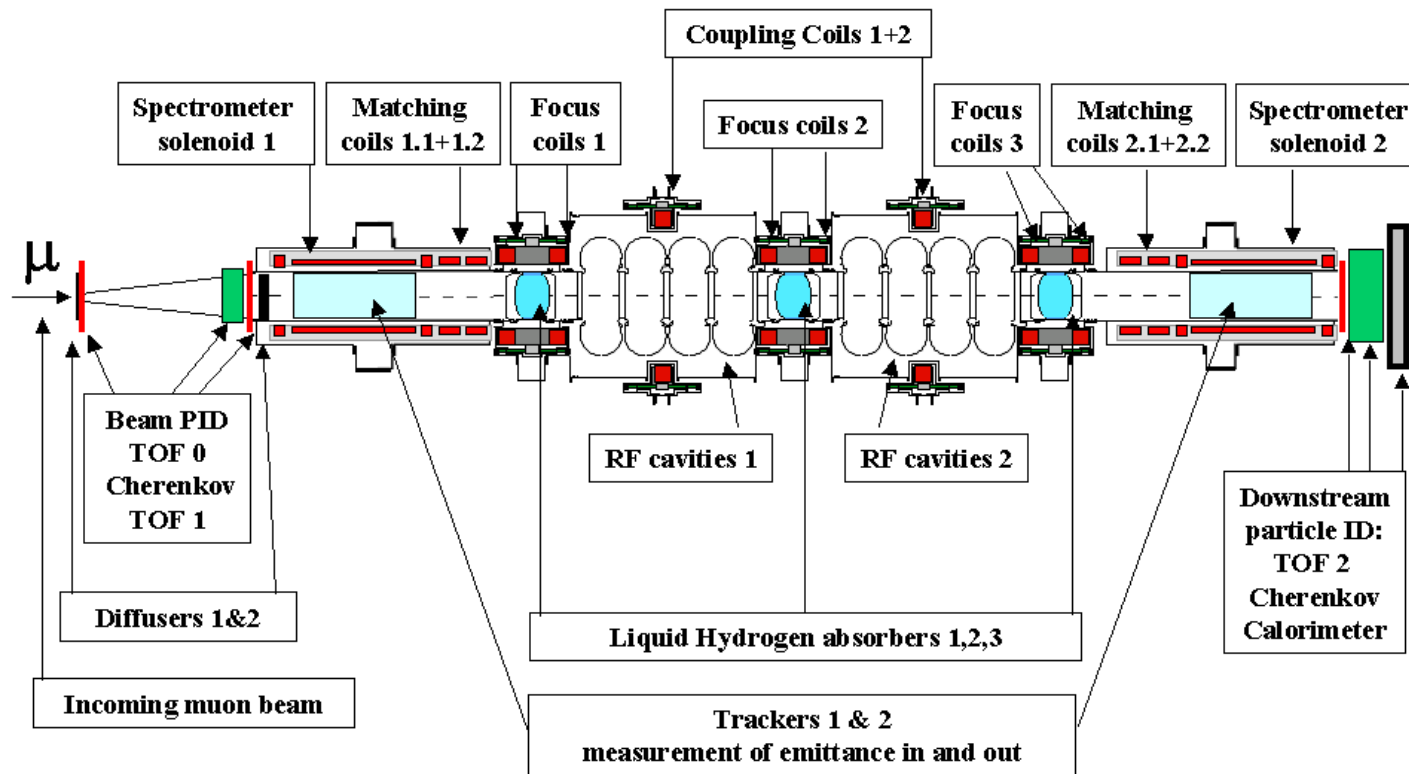
G4MICE Facilities

- (almost) full geometry/materials for the detectors
- calculation of field from coils/currents (without iron)
- input field map capability (not fully tested)
- track distributions at different planes (virtual detectors)
- **Simulation, Digitization, Reconstruction** executables
- **mice2root** - tool for converting output to root format

Simulation Input Deck

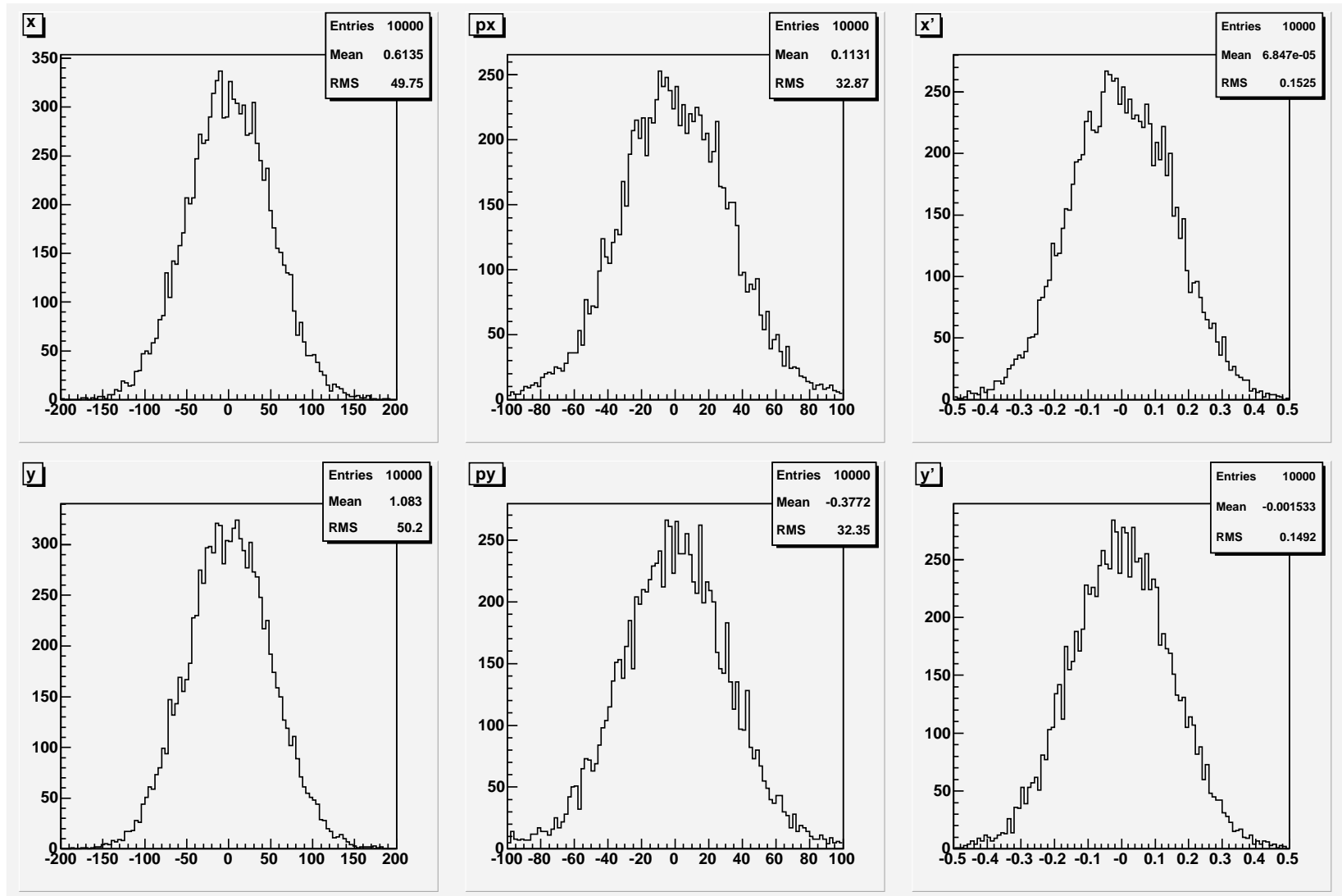
numEvts 10000
RunMode Normal
SolDataFiles useFiles
rfCellType none
AbsorberType none
ZOffsetStart -5400
SigmaX 50.
SigmaXPrime 0.15
BunchLength 30.
DeltaEoverE 0.1
AverageKineticEnergy 120.5
NominalKineticEnergy 120.5
TrackerOffsetZ 0.
muDoDecay 1
BeamProtonFraction 0.1
BeamPionFraction 0.1

Layout

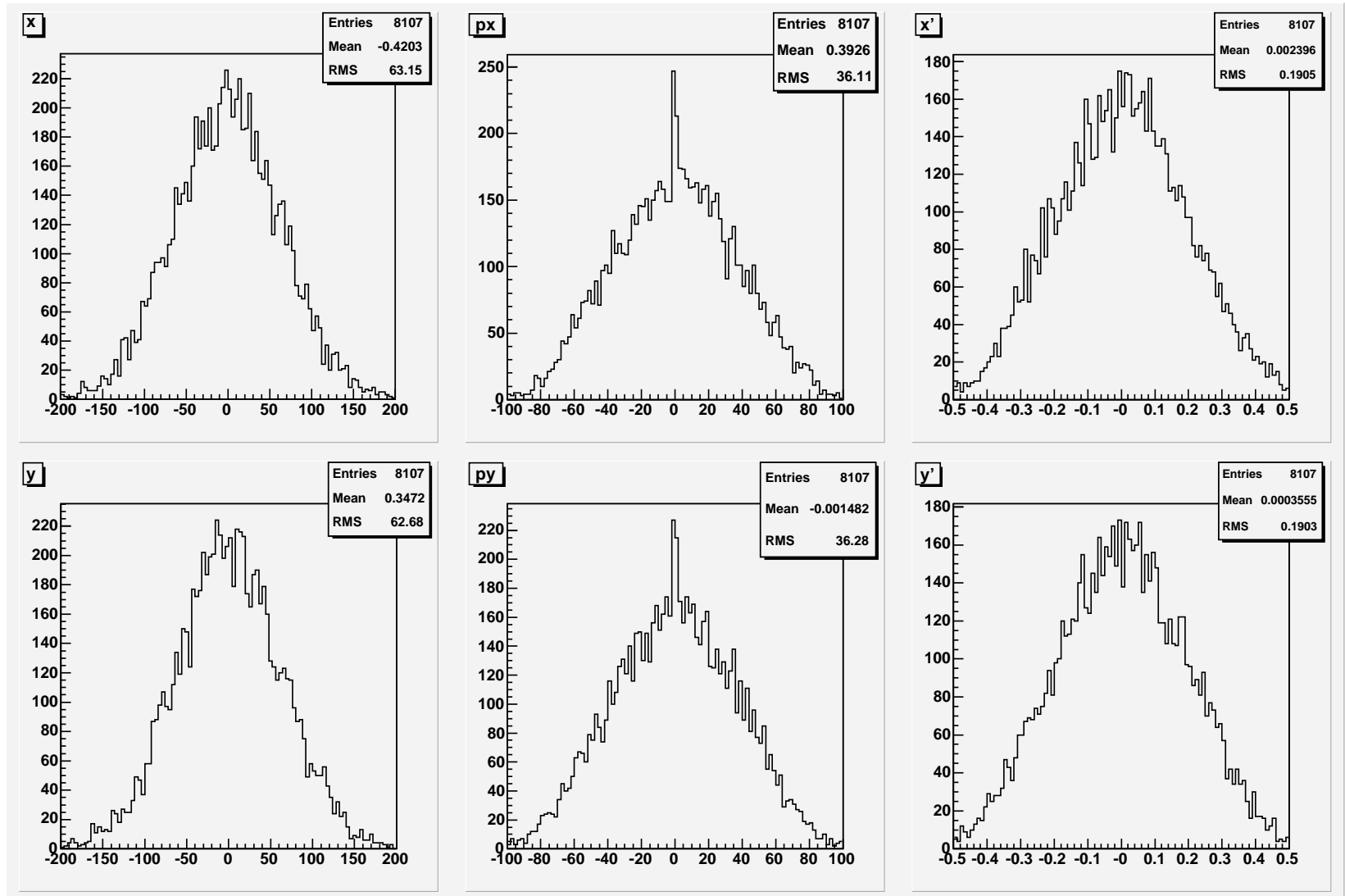


BASELINE (no iron)

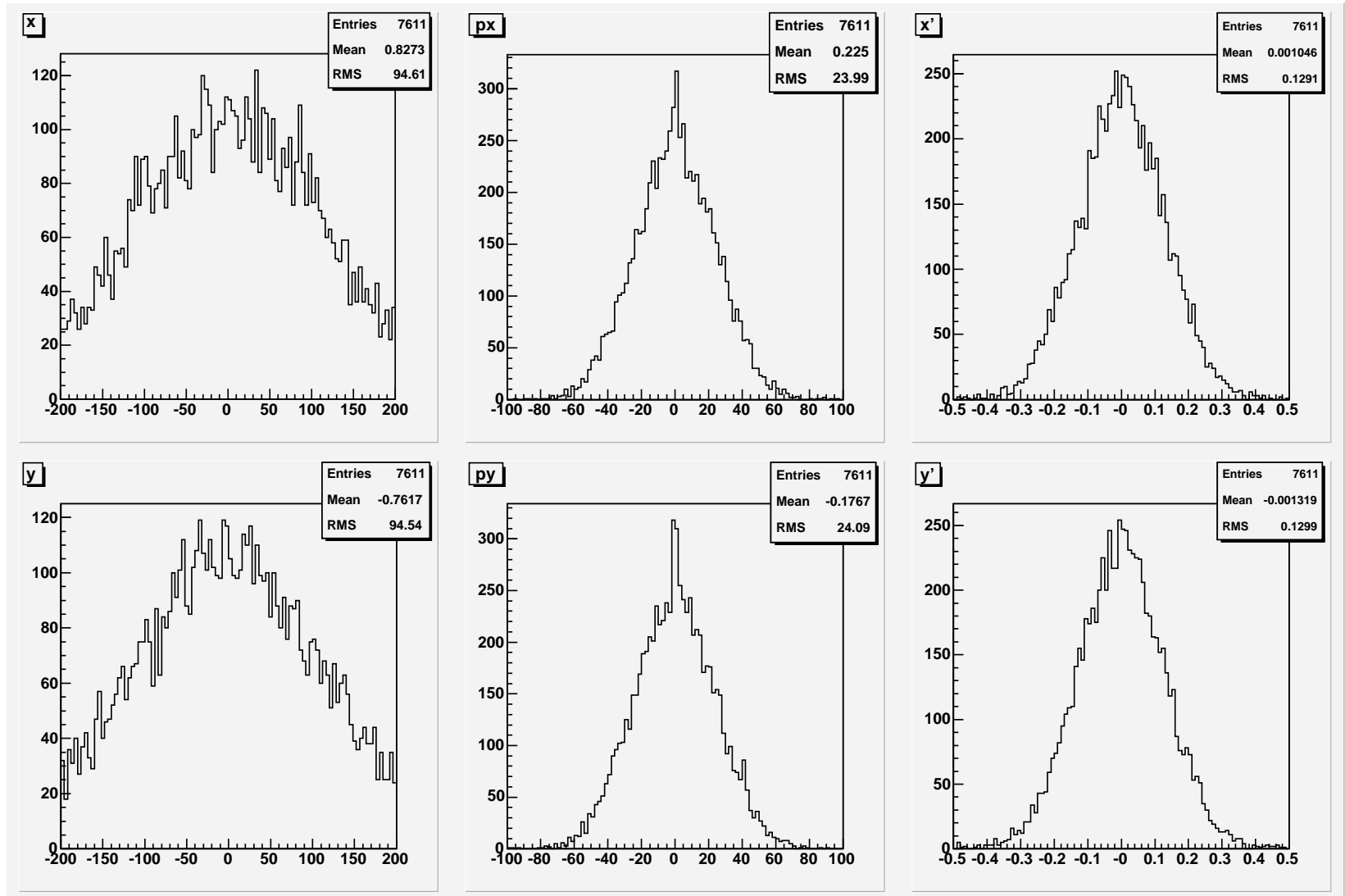
Input Beam



Ckov

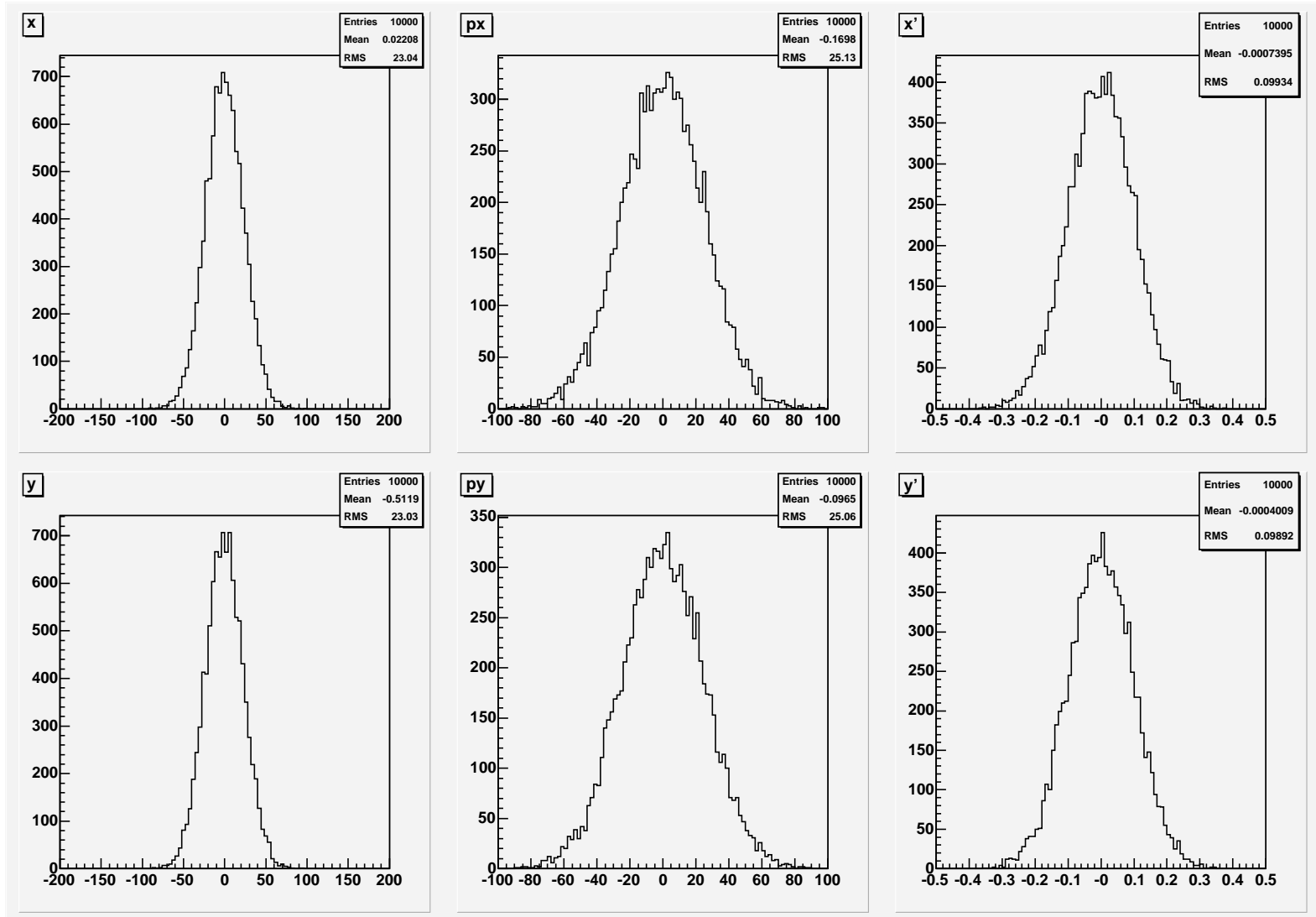


EMCal

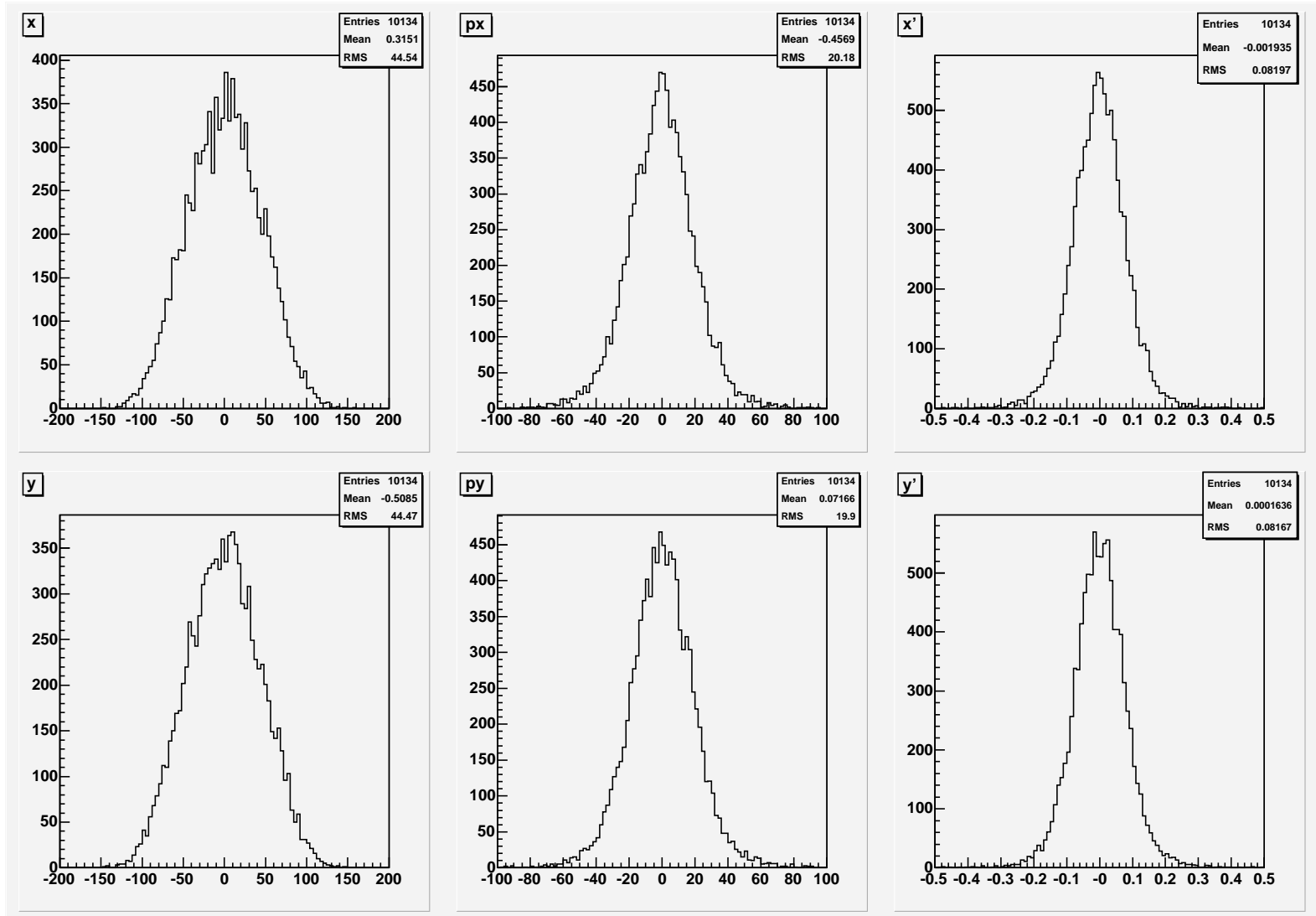


DISPLACED DOWNSTREAM DETECTORS (22cm, no iron)

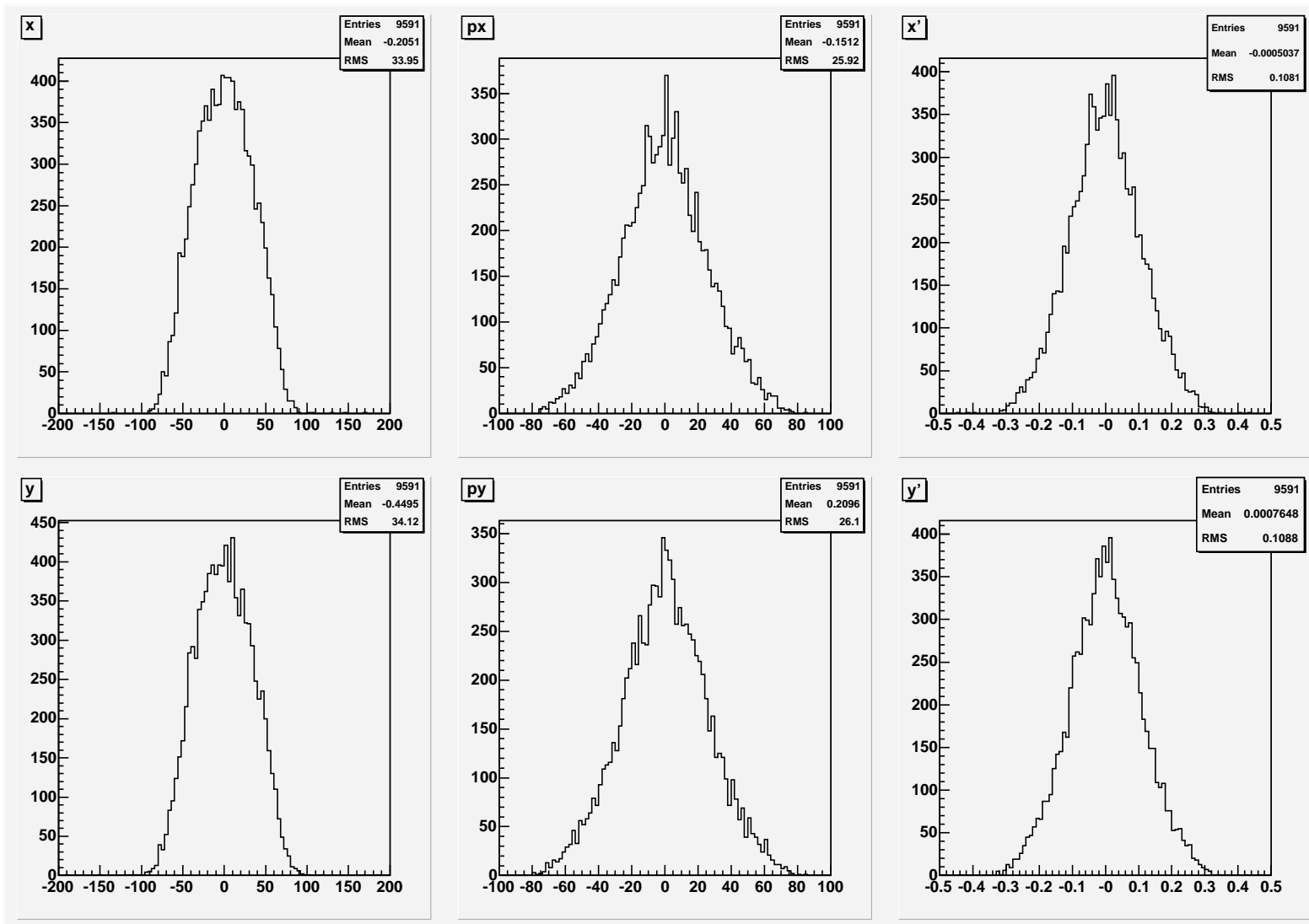
Input Beam ($z = -5.65\text{m}$)



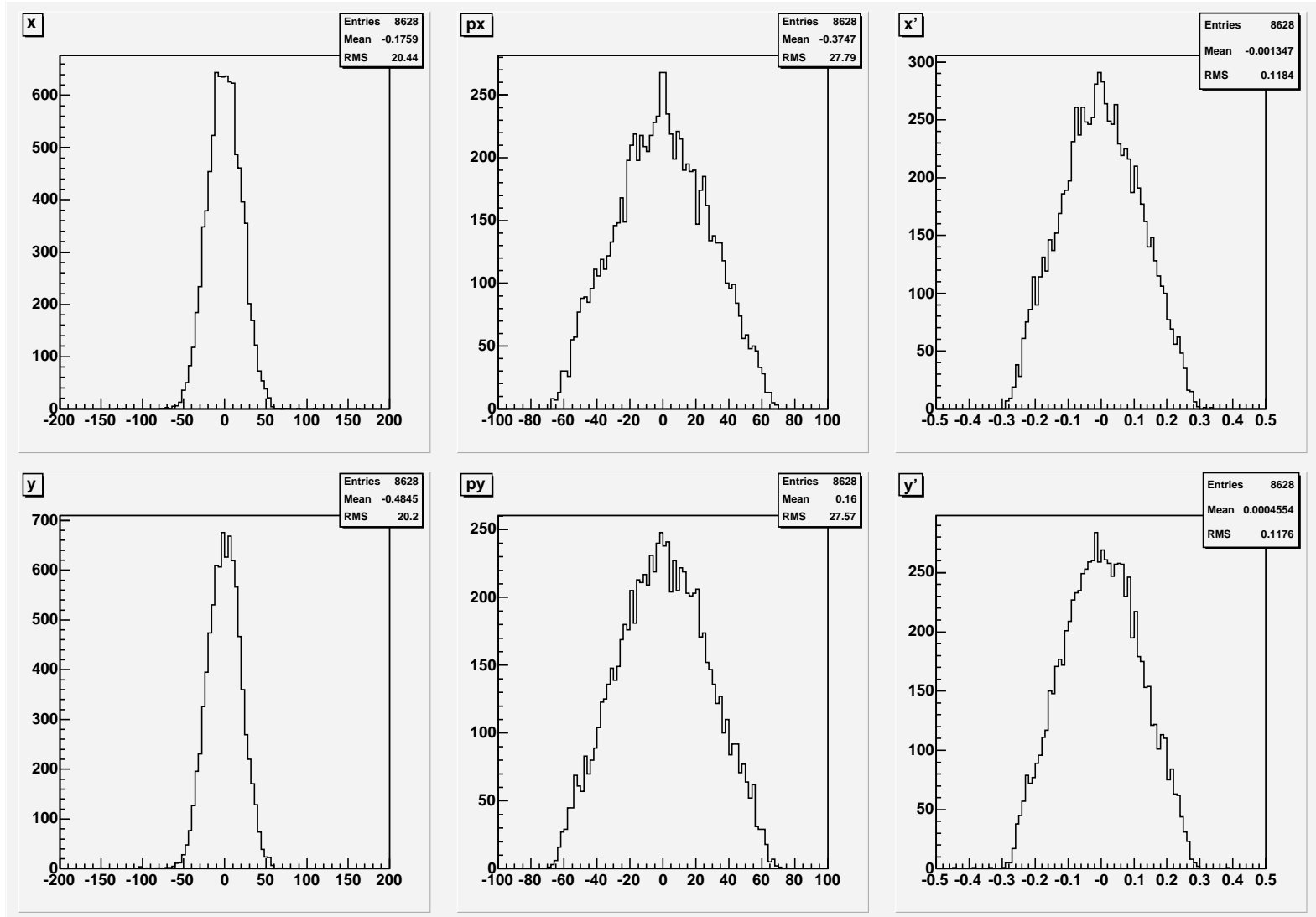
$z = -2.75\text{m}$



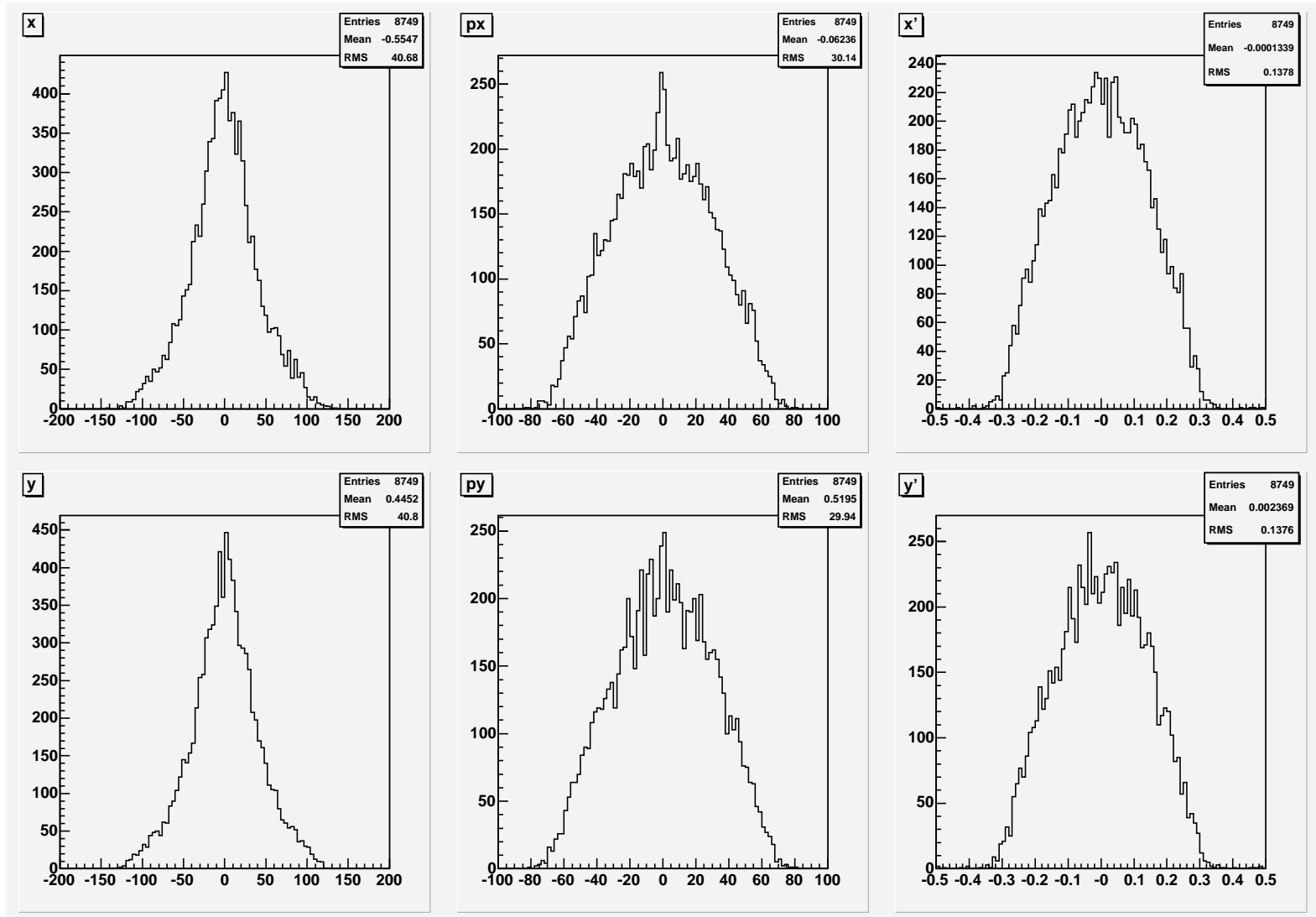
$z = 0$



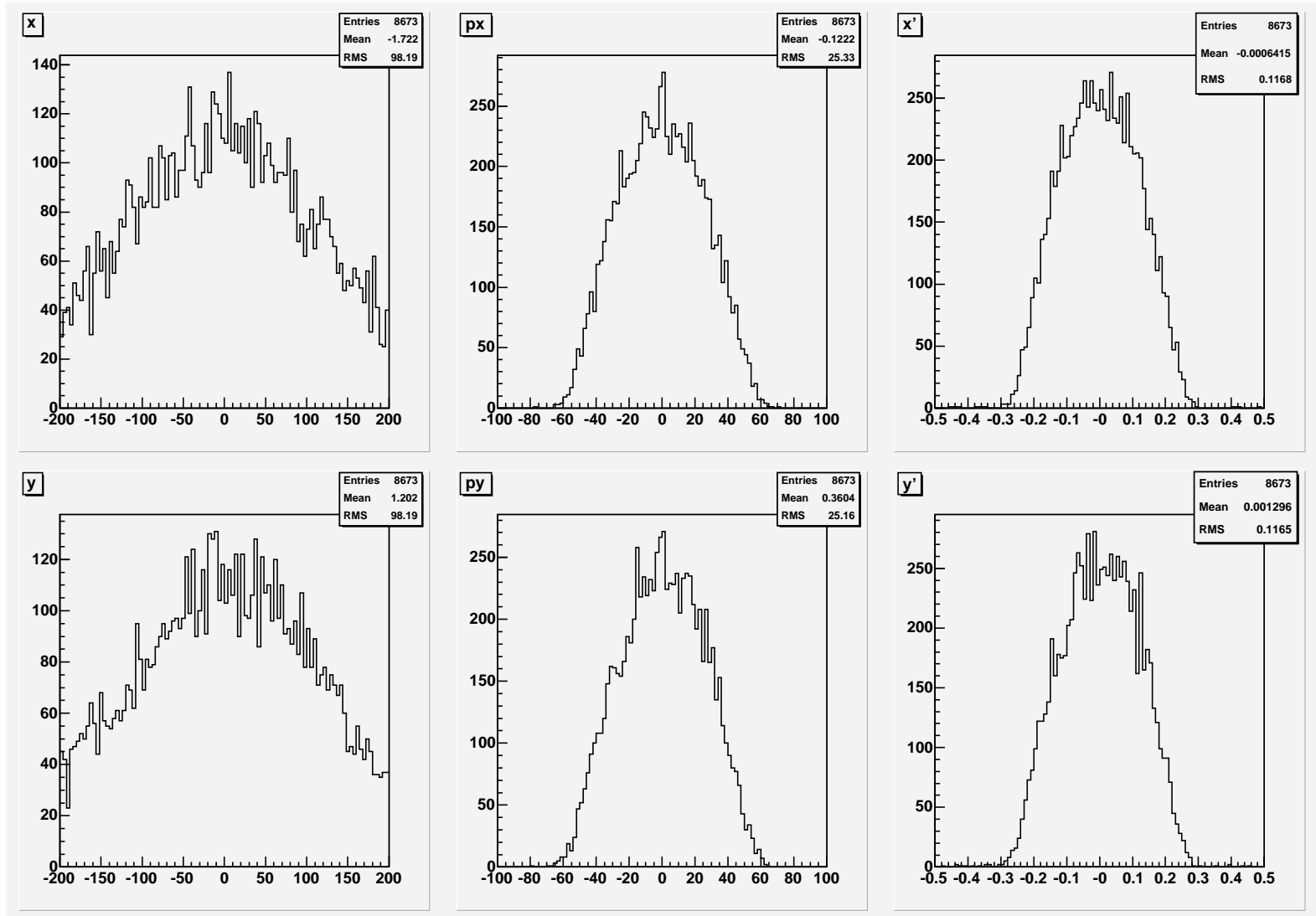
$z = +2.75\text{m}$



Ckov



EMCal



Status

- Have distributions for the baseline case
- Have distributions with displaced downstream detectors
- Magnetic field map input capability being tested now
- Need to put in fields with iron and repeat
- Machinery in place to iterate on downstream track distributions
- Just need to turn the crank and converge on a solution