

Beam Halo in data - update

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DESY/UniHH Alignment chat

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Data sample

- Datasets:
 - /Cosmics/Commissioning10-StreamTkAlBeamHalo-v8/ALCARECO
 - /Cosmics/Commissioning10-StreamTkAlBeamHalo-v9/ALCARECO
 - /Cosmics/Run2010A-StreamTkAlBeamHalo-v1/ALCARECO
 - /Cosmics/Run2010A-TkAlBeamHalo-v2/ALCARECO
 - **New: /Cosmics/Run2010A-TkAlBeamHalo-v4/ALCARECO**
- Run Range: 132514-142189 (01.04.2010-ongoing)
- Number of events: 1419568
 - only runs with > 1000 events have been analyzed
- Beam Halo MC:
 - /BeamHalo/Summer09-STARTUP31X_V7_StreamTkAlBeamHalo-v1/ALCARECO

Event + Track selection

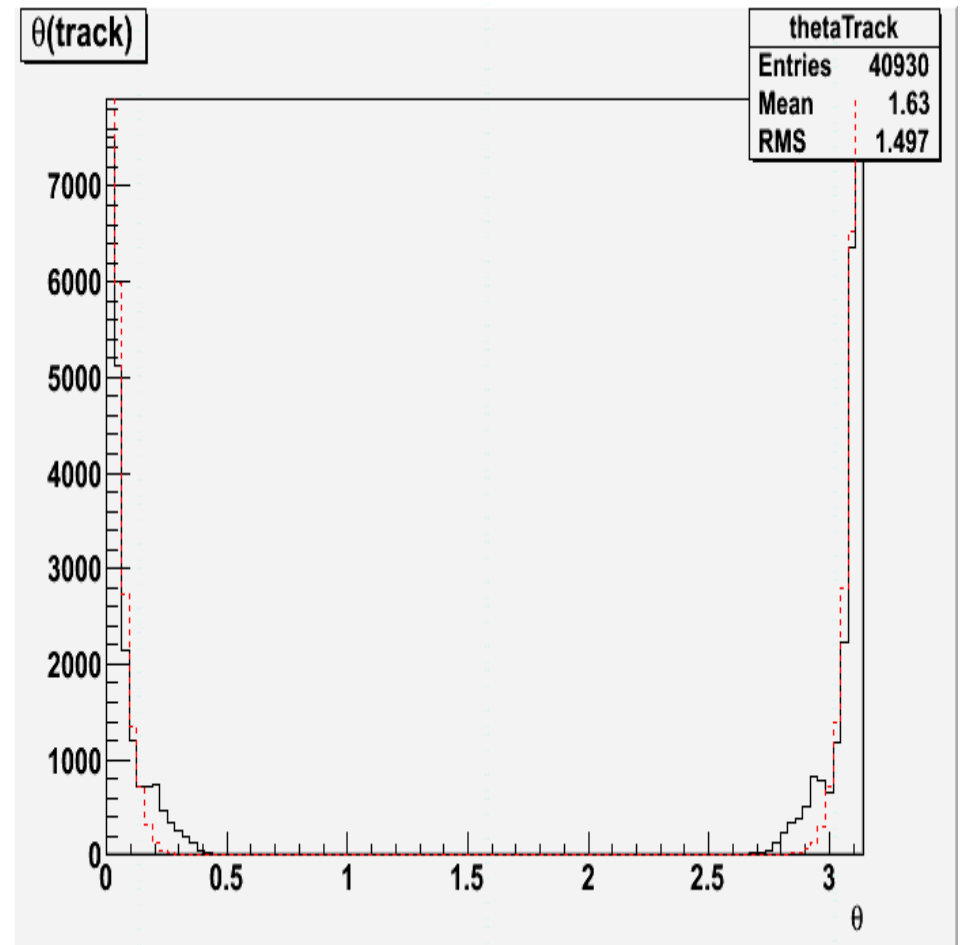
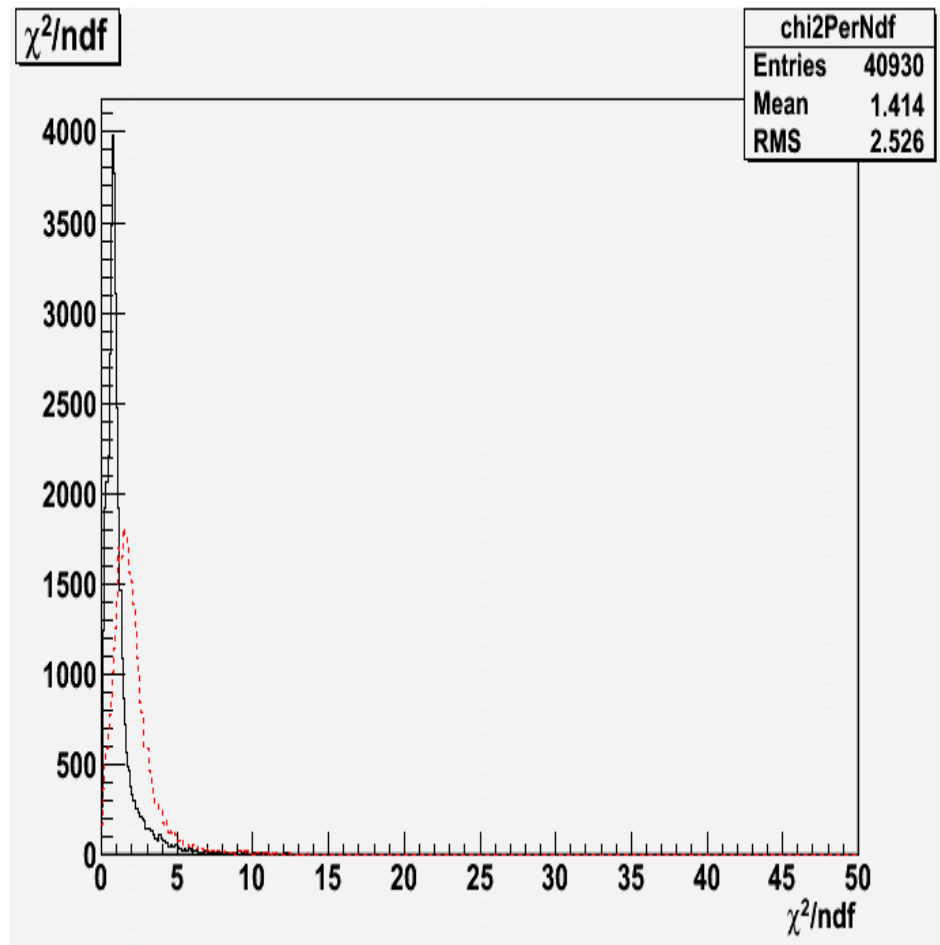
- Event election:
 - Techn. Trigger: 36 OR 37 OR 38 OR 39
 - no HLT_PhysicsDeclared bit
- Track selection:
 - TrackRefitterBHM
 - pMin=2.5
 - nHitMin=8
 - minHitsPerSubDet.inENDCAPplus=1
 - minHitsPerSubDet.inENDCAPminus=1

Number of selected tracks

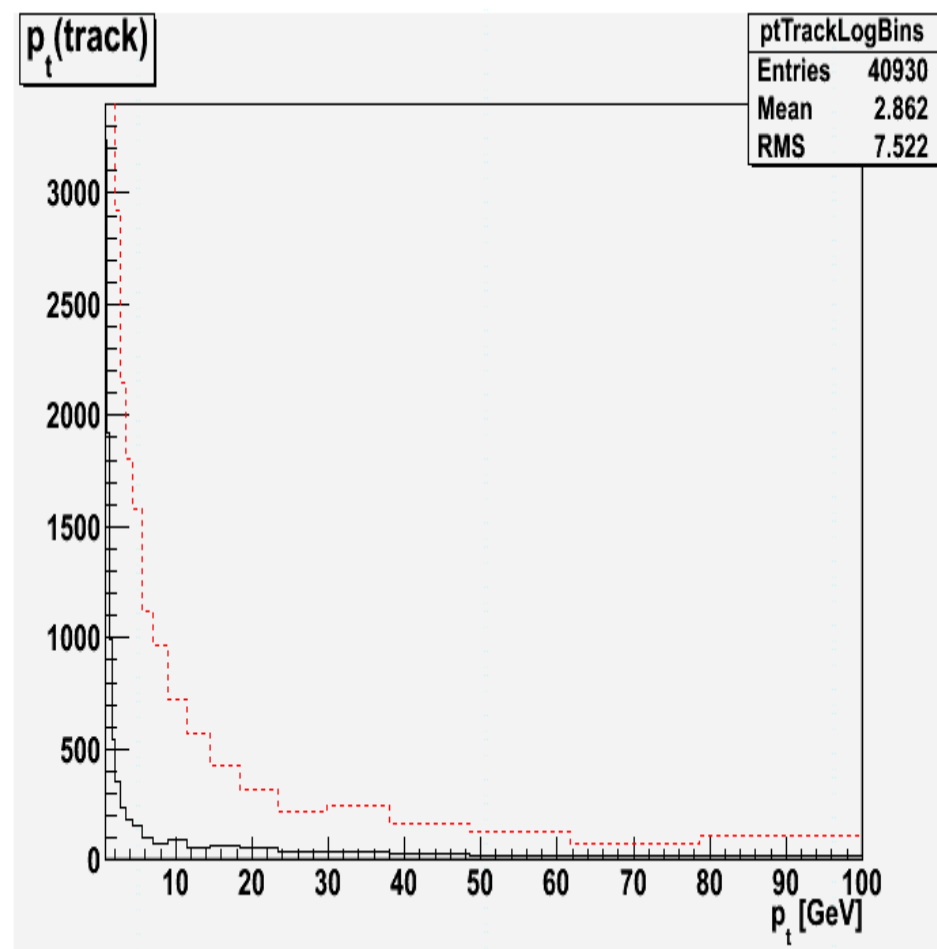
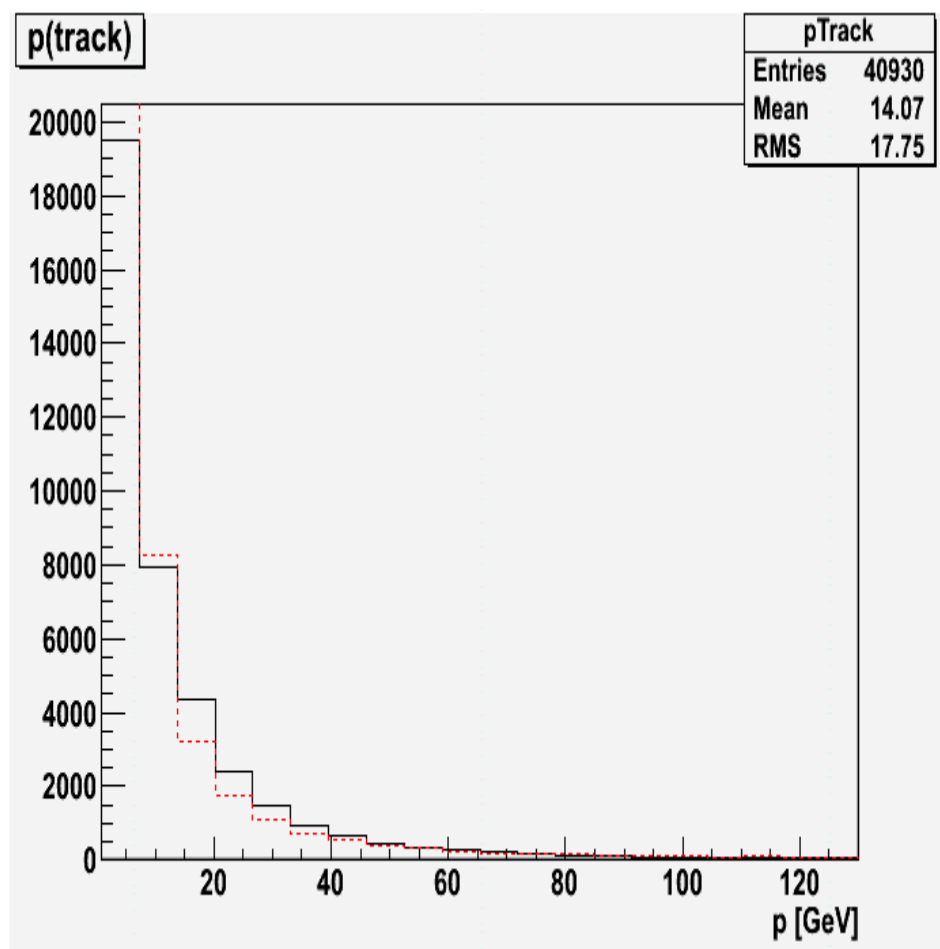
Sample	Events	Tracks
Commissioning10-StreamTkAlBeamHalo-v8	145219	1801
Commissioning10-StreamTkAlBeamHalo-v9	365788	32345
Run2010A-StreamTkAlBeamHalo-v1	28368	1024
Run2010A-TkAlBeamHalo-v2	95989	1092
Run2010A-TkAlBeamHalo-v4	784204	4668
Monte Carlo	100000	30386

Track distributions

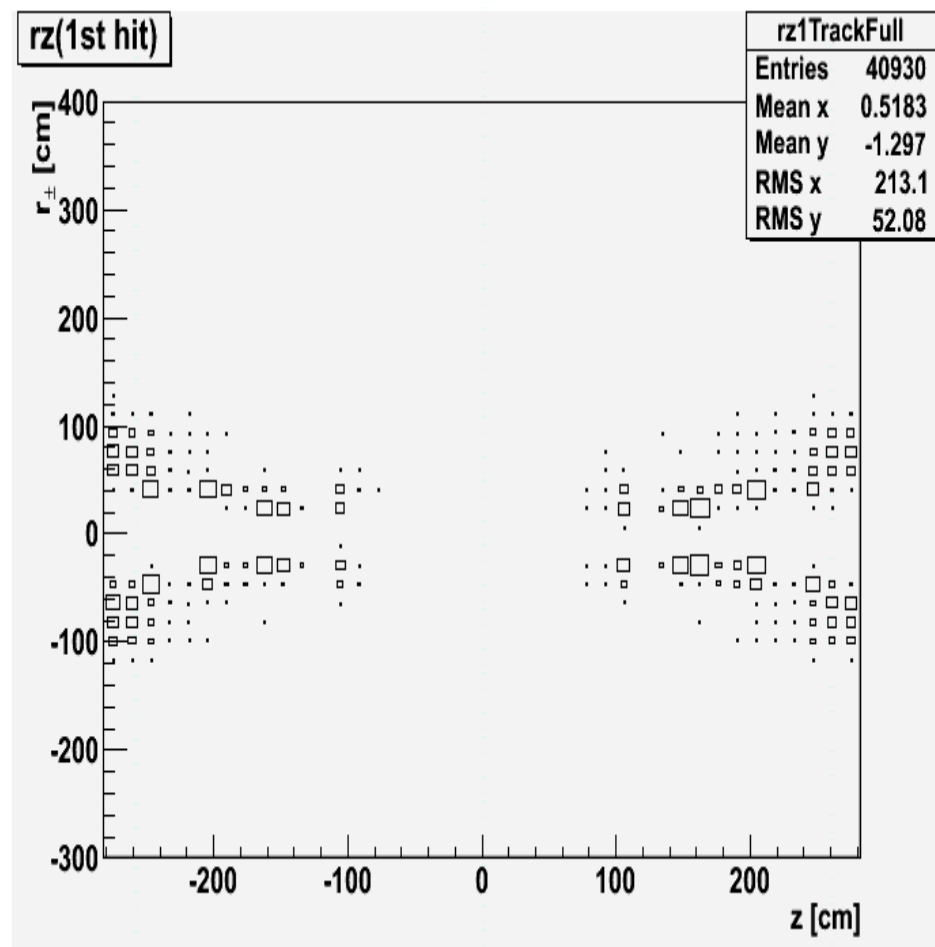
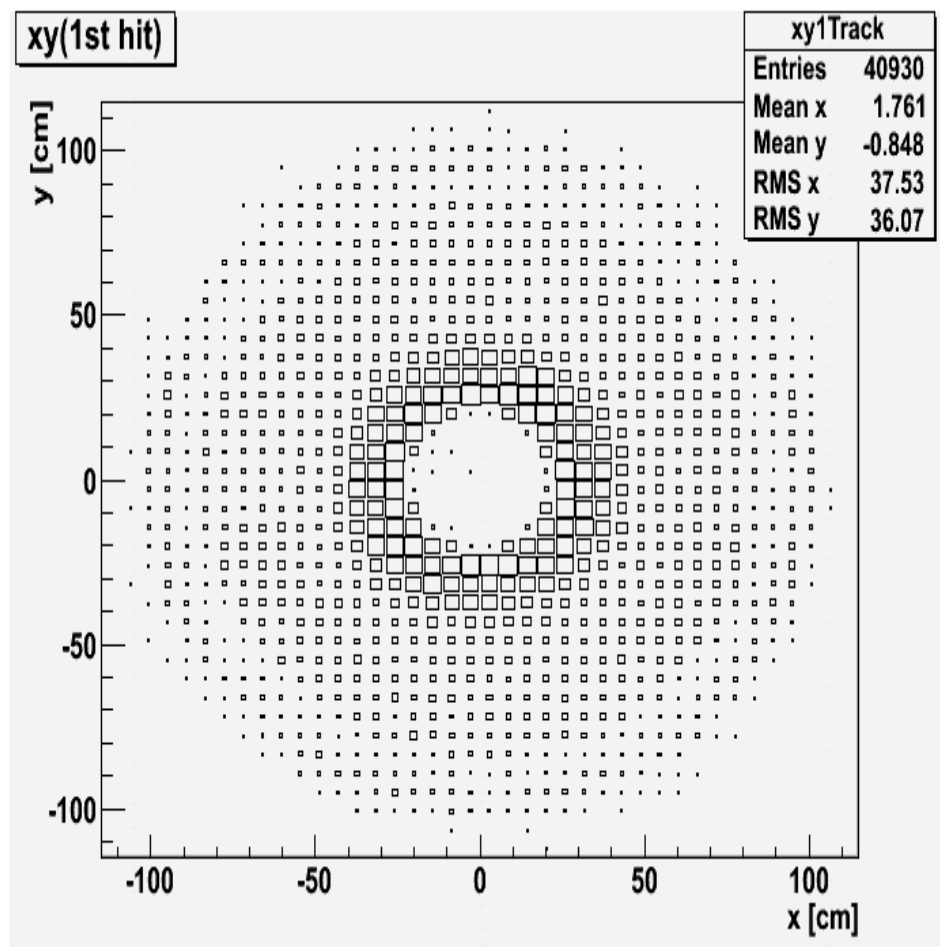
- Black solid line: data
- Red dashed line: MC



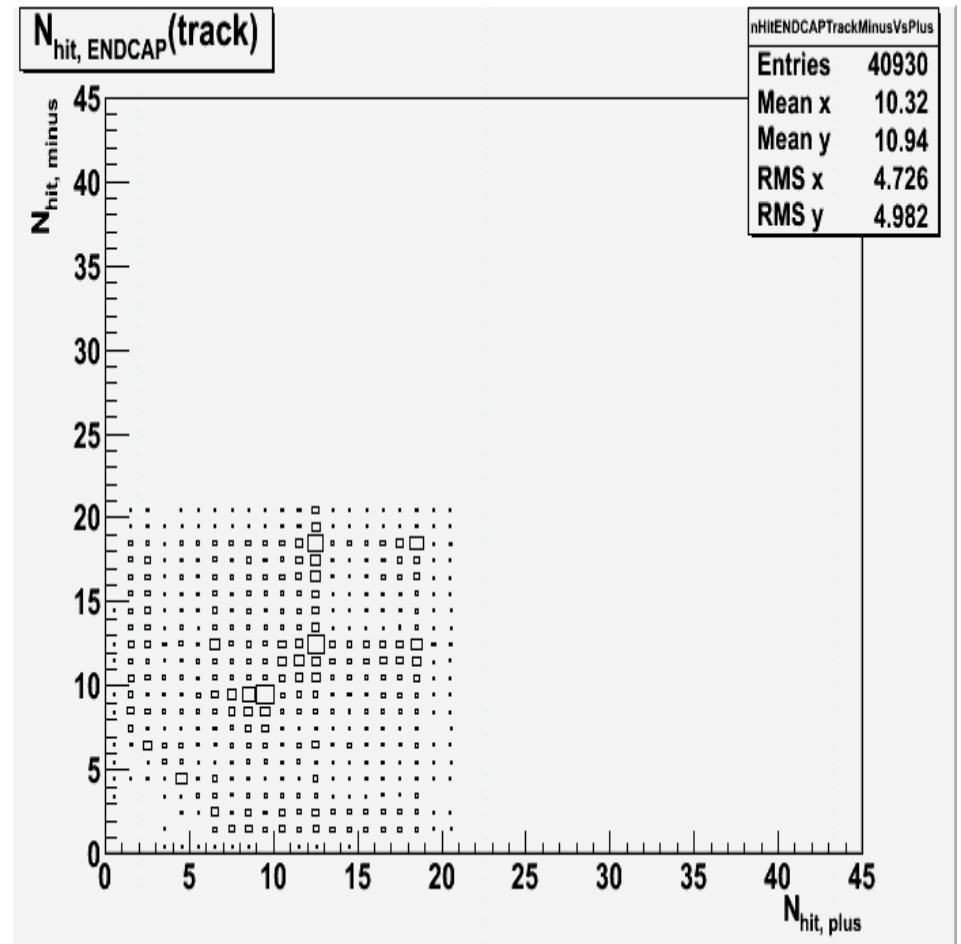
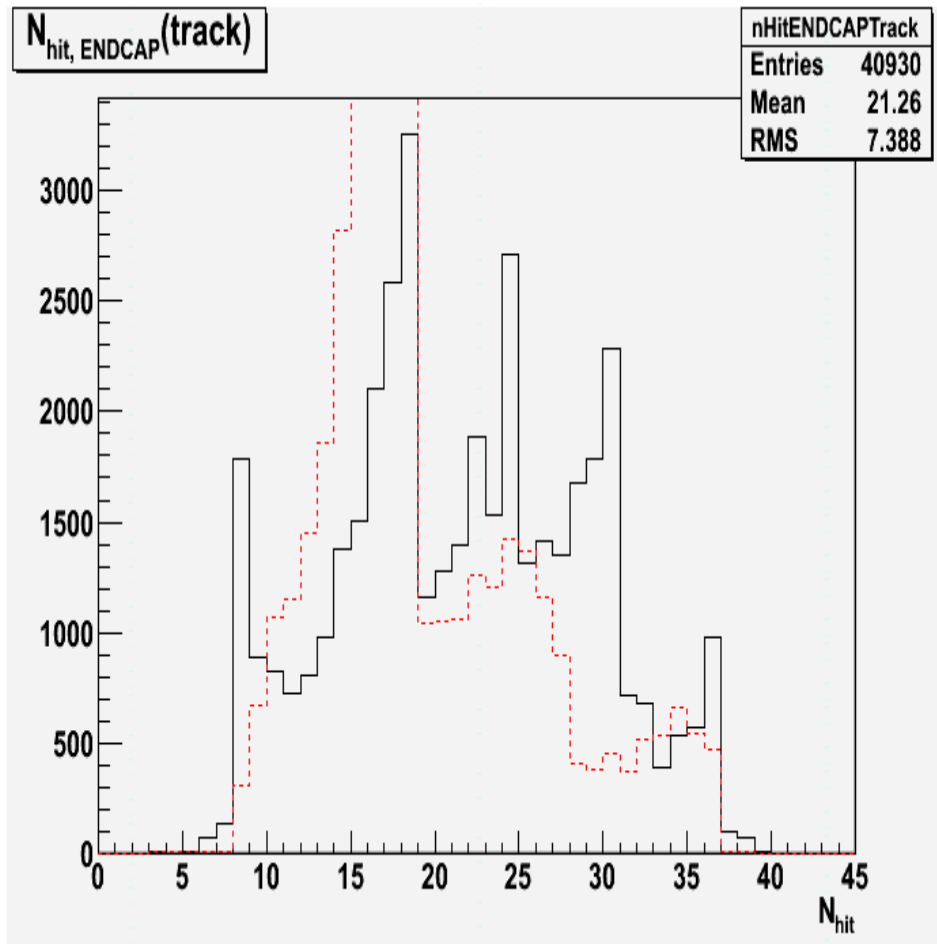
Track distributions



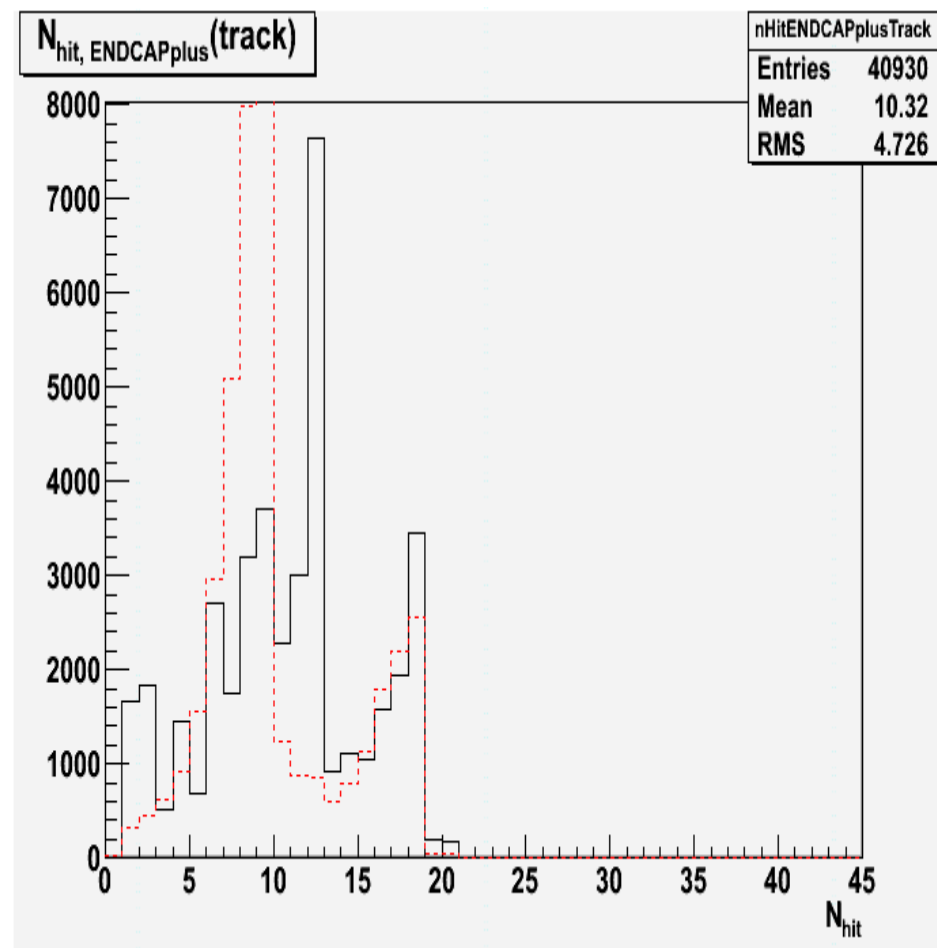
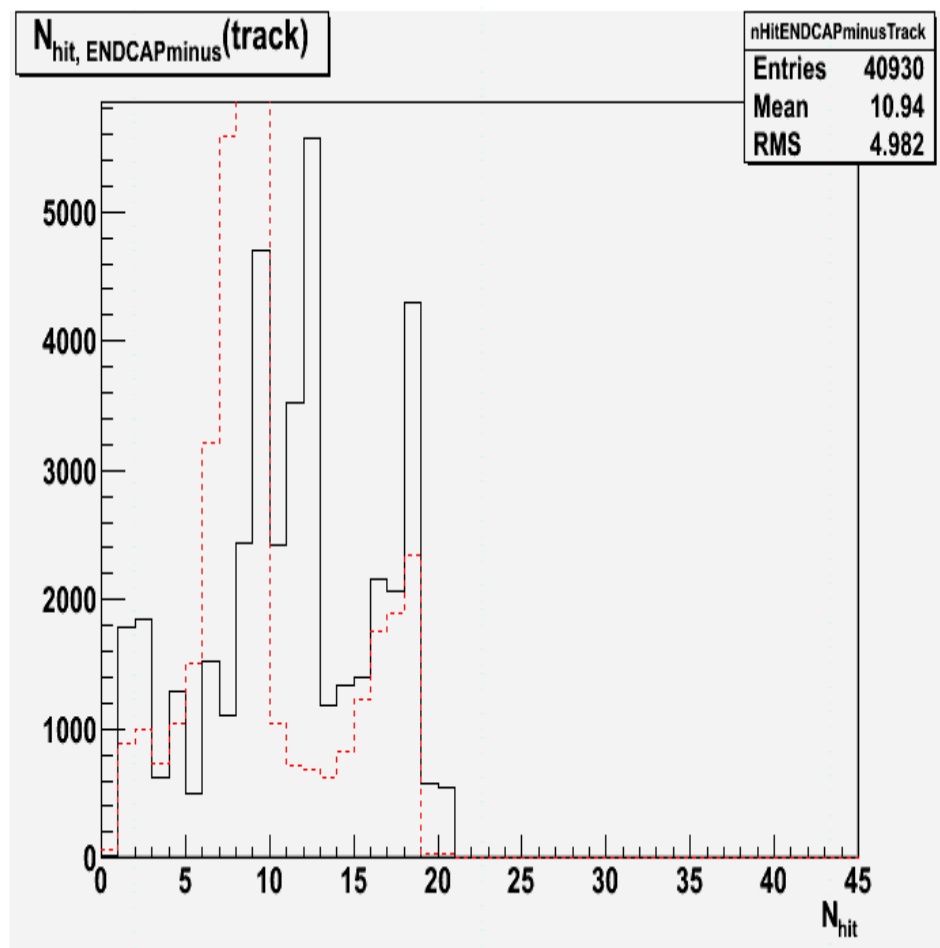
Track distributions



Track distributions



Track distributions



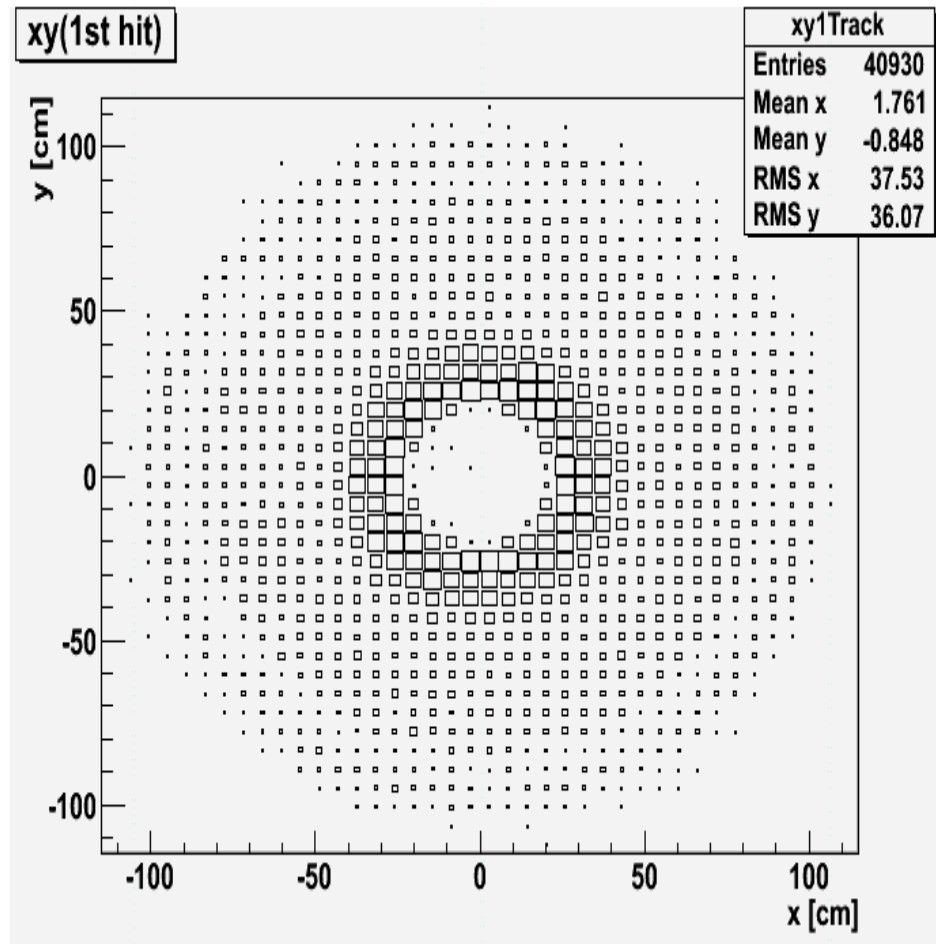
Conclusions

- Data to MC comparison:
 - differences in the distributions (expected)
 - remove tracks in data with $n\text{Hits} < 12$?
- In the current data set the number of tracks is very small: what's wrong? Checks ongoing.

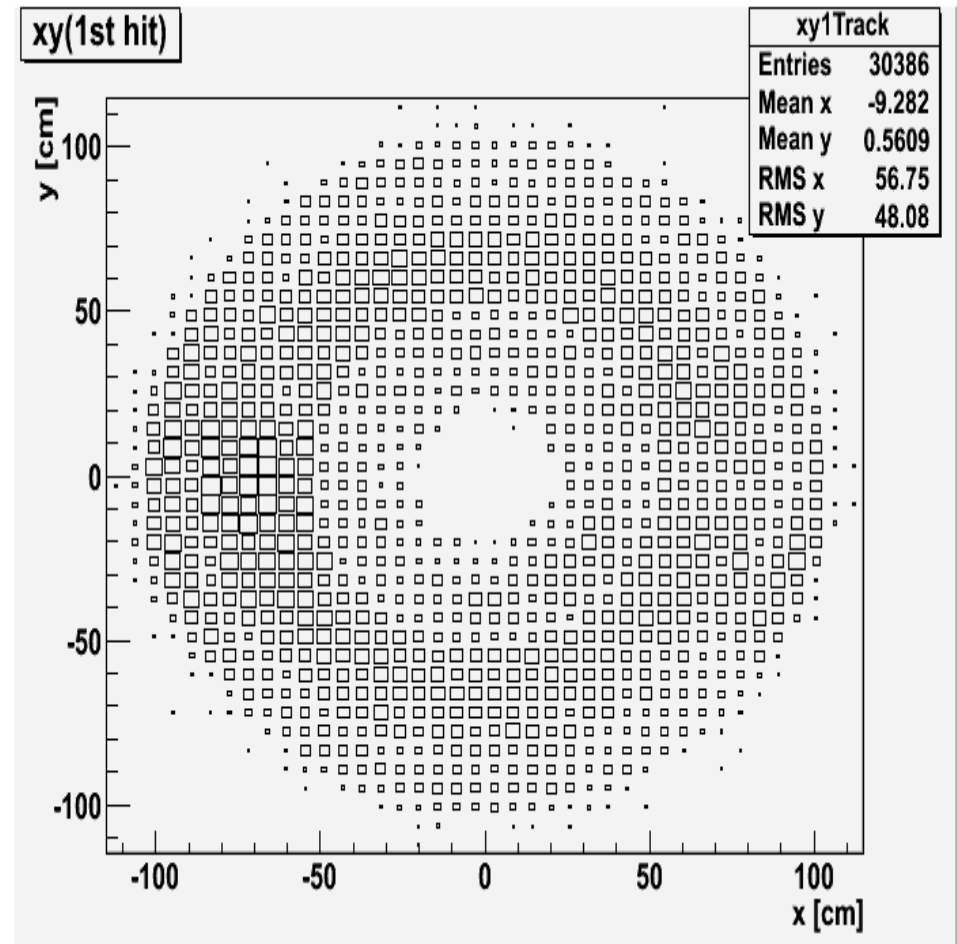
Additional Slides

Track distributions

- Left: Data

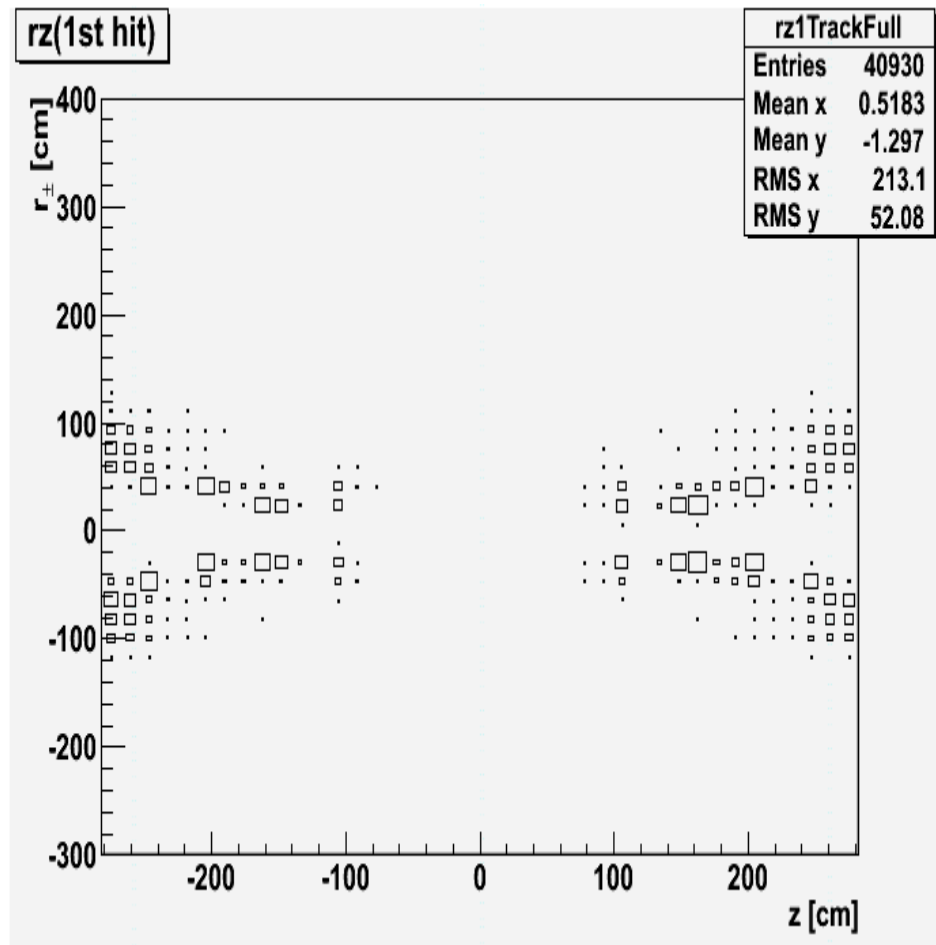


- Right: MC

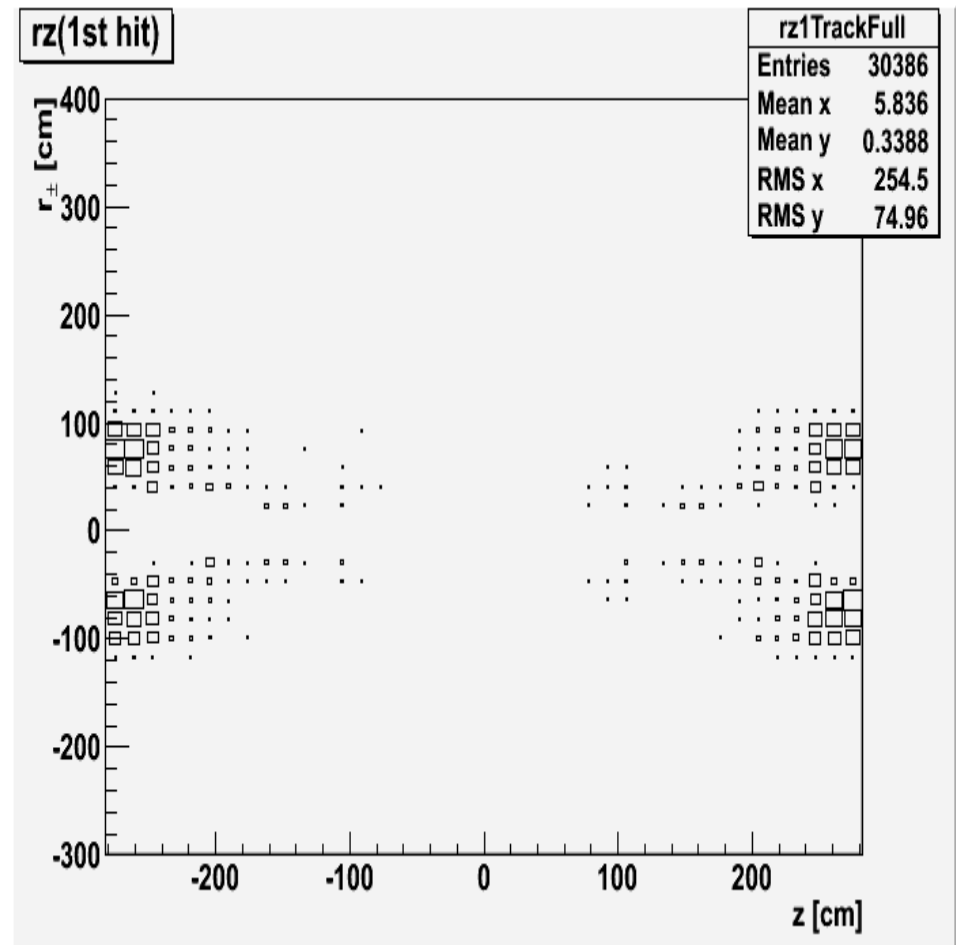


Track distributions

- Left: Data



- Right: MC



Track distributions

- Left: Data

- Right: MC

