

Beam Halo in data

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DESY/UniHH Alignment meeting

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Data sample

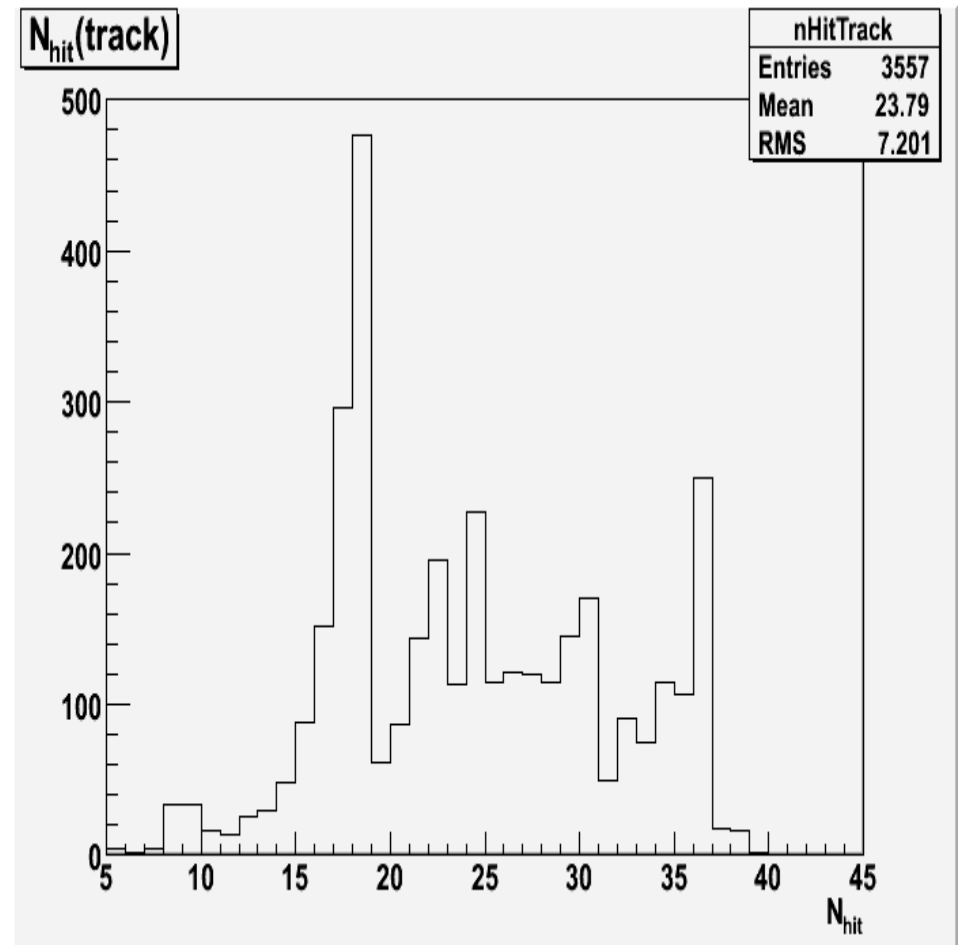
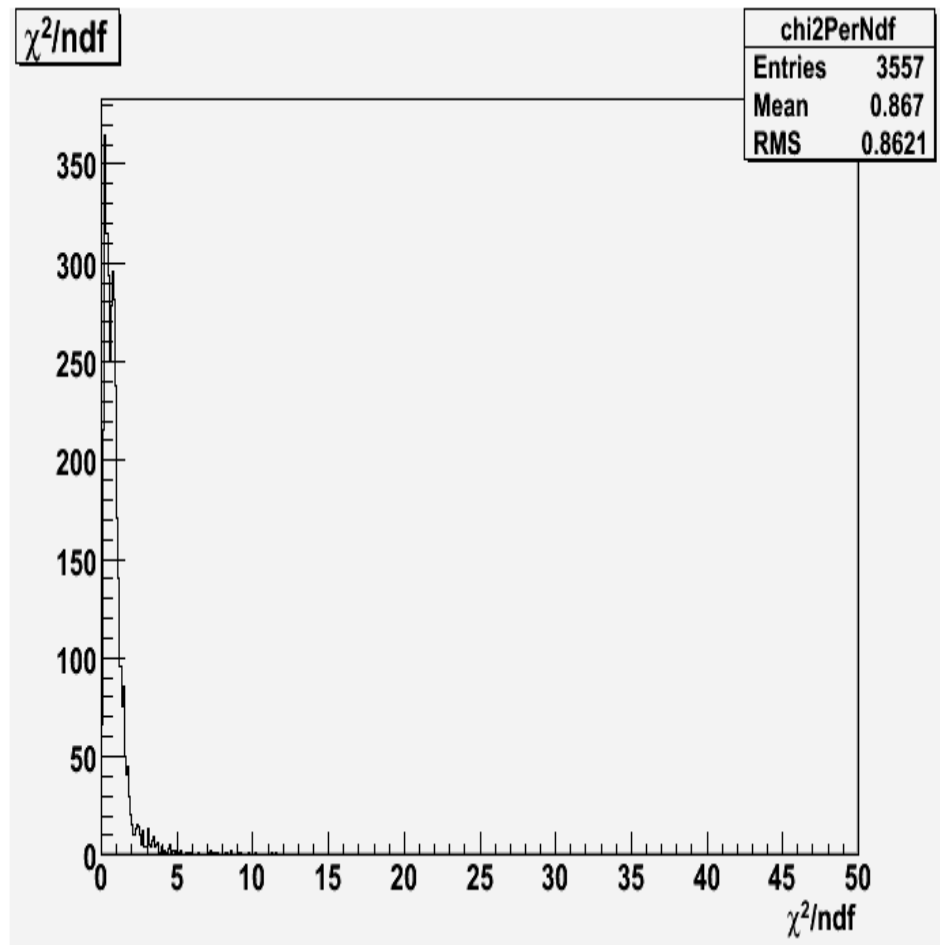
- Datasets:
 - /Cosmics/Commissioning10-StreamTkAlBeamHalo-v8/ALCARECO
 - /Cosmics/Commissioning10-StreamTkAlBeamHalo-v9/ALCARECO
 - /Cosmics/Run2010A-StreamTkAlBeamHalo-v1/ALCARECO
 - /Cosmics/Run2010A-TkAlBeamHalo-v2/ALCARECO
- Period: 01.04-10.06.2010
- Run Range: 132514-137436
- Number of events: 574548
- /Cosmics/Run2010A-TkAlBeamHalo-v4/ALCARECO was not yet transferred at CMSCAF, last week.

Trigger/Track selection

- Tech. trigger: '0 AND (36 OR 37 OR 38 OR 39)'
- Track selection:
 - (1) $p_{\text{Min}}=2.5$, $n_{\text{HitMin}}=8$, $\text{minHitsPerSubDet.inTECplus}=1$, $\text{minHitsPerSubDet.inTECminus}=1$: 3557 selected tracks
 - (2) $p_{\text{Min}}=2.5$, $n_{\text{HitMin}}=8$: 7661 selected tracks.

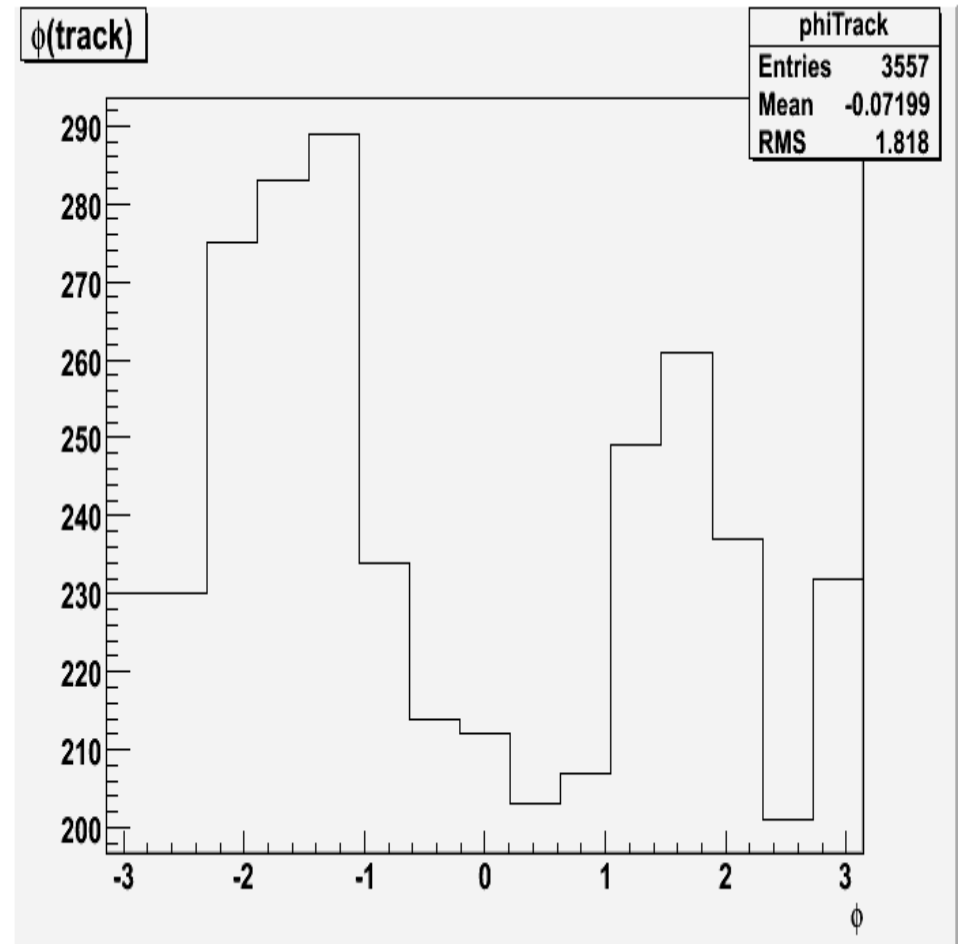
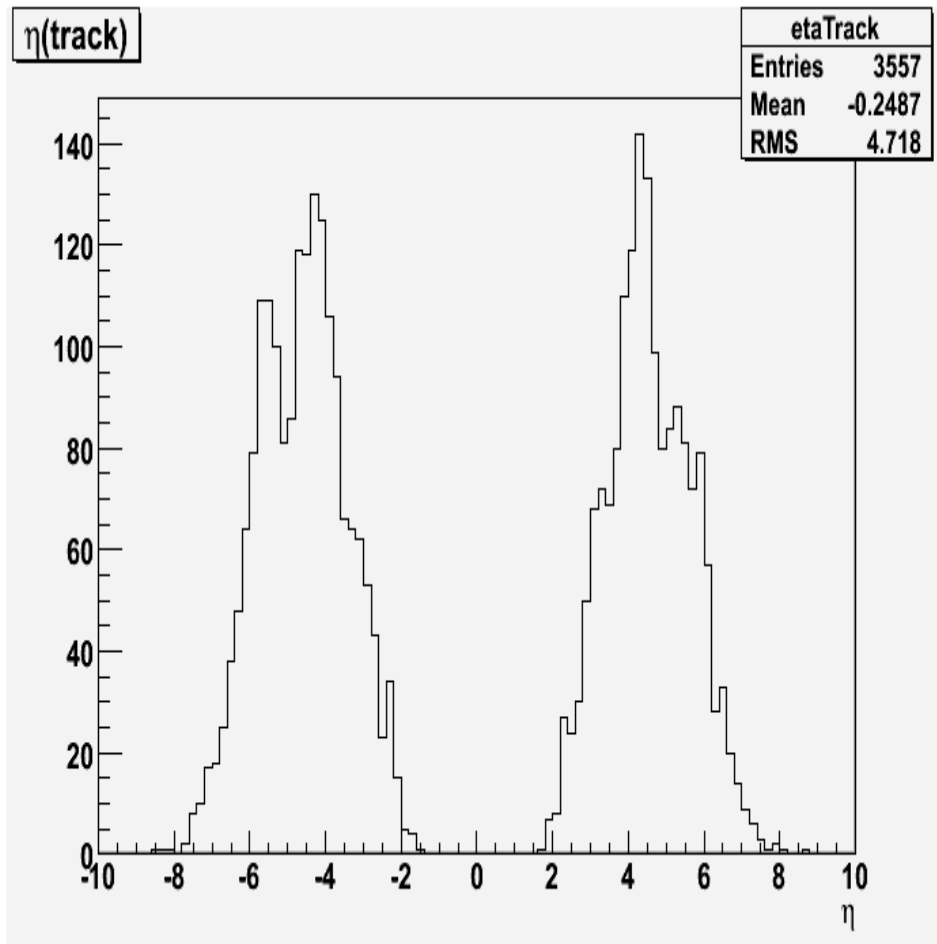
Track distributions

- Track distributions for selection (1)



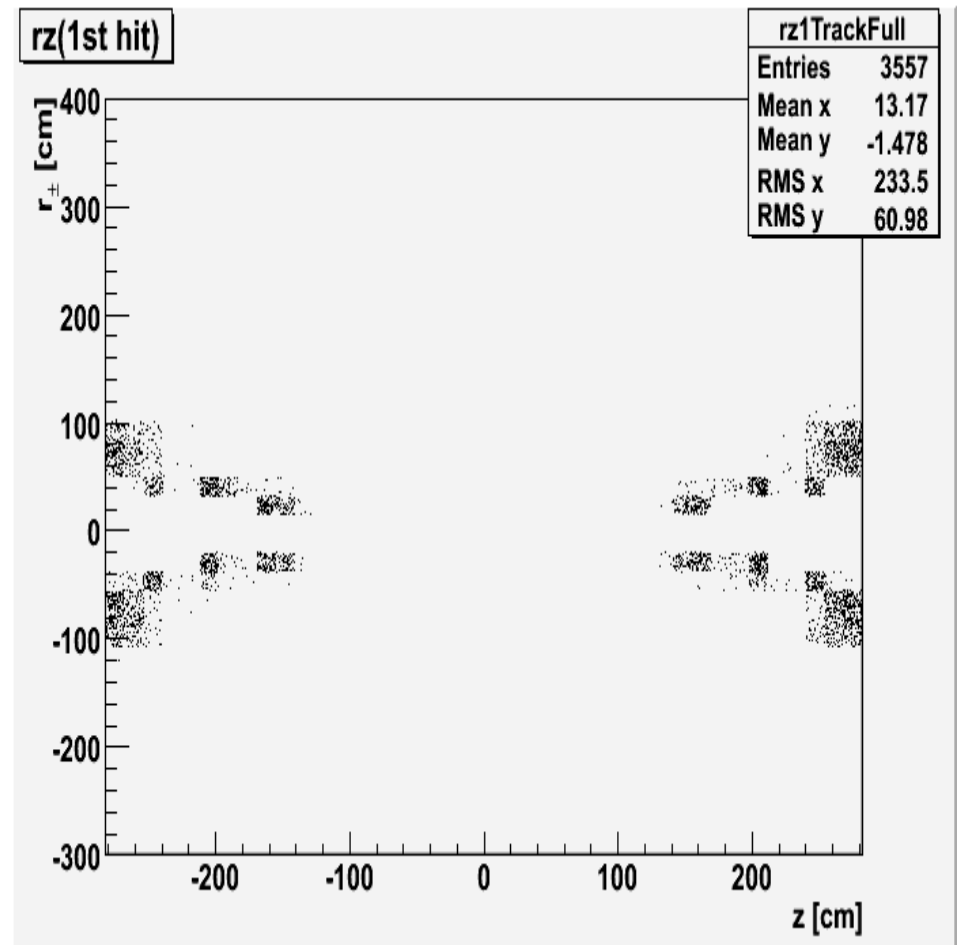
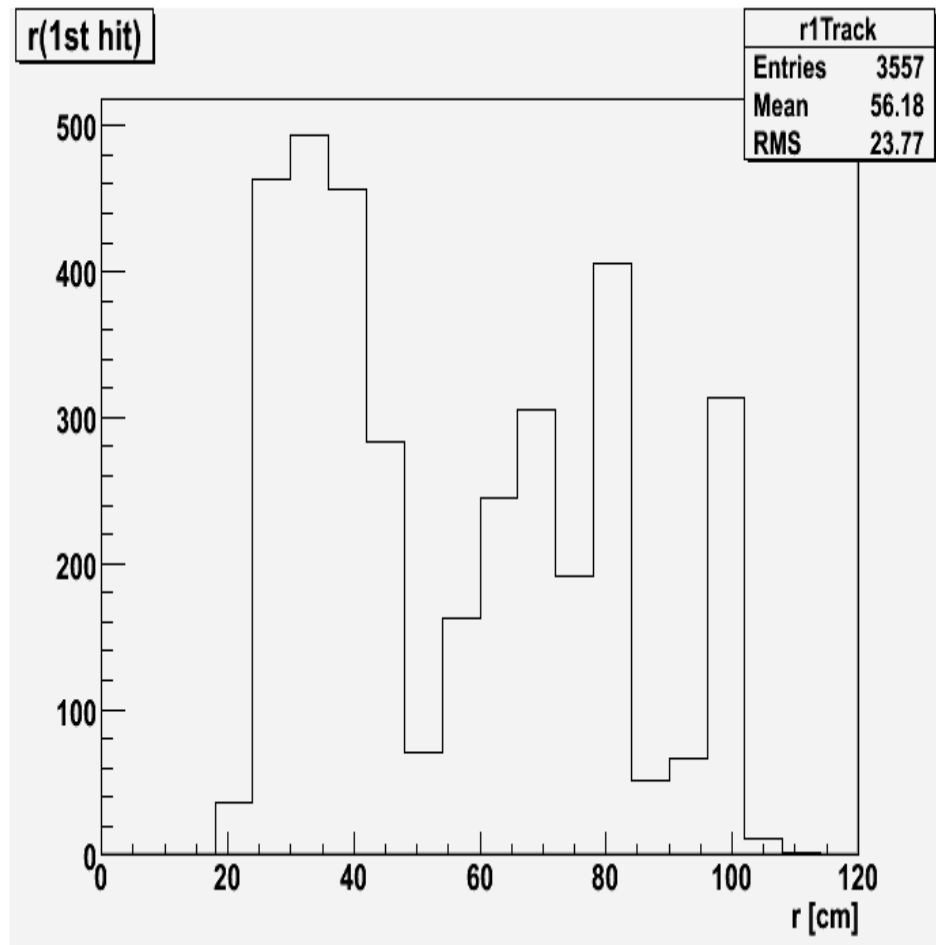
Track distributions

- Track distributions for selection (1)



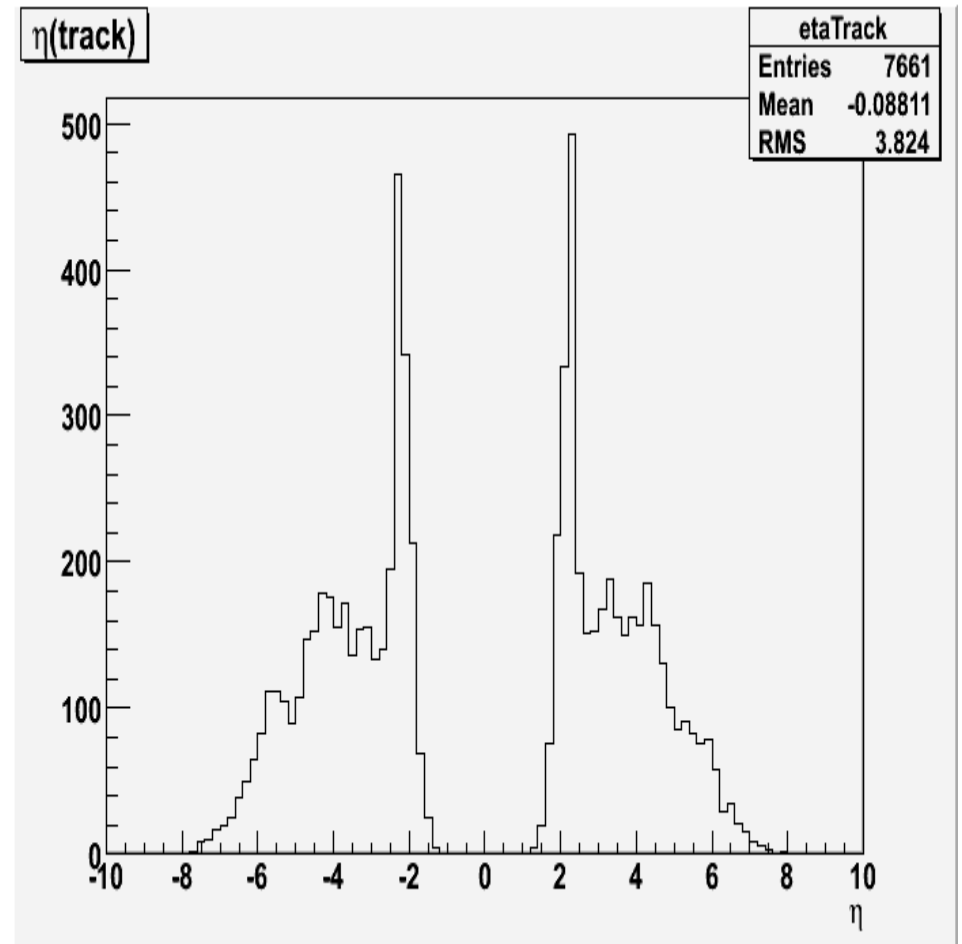
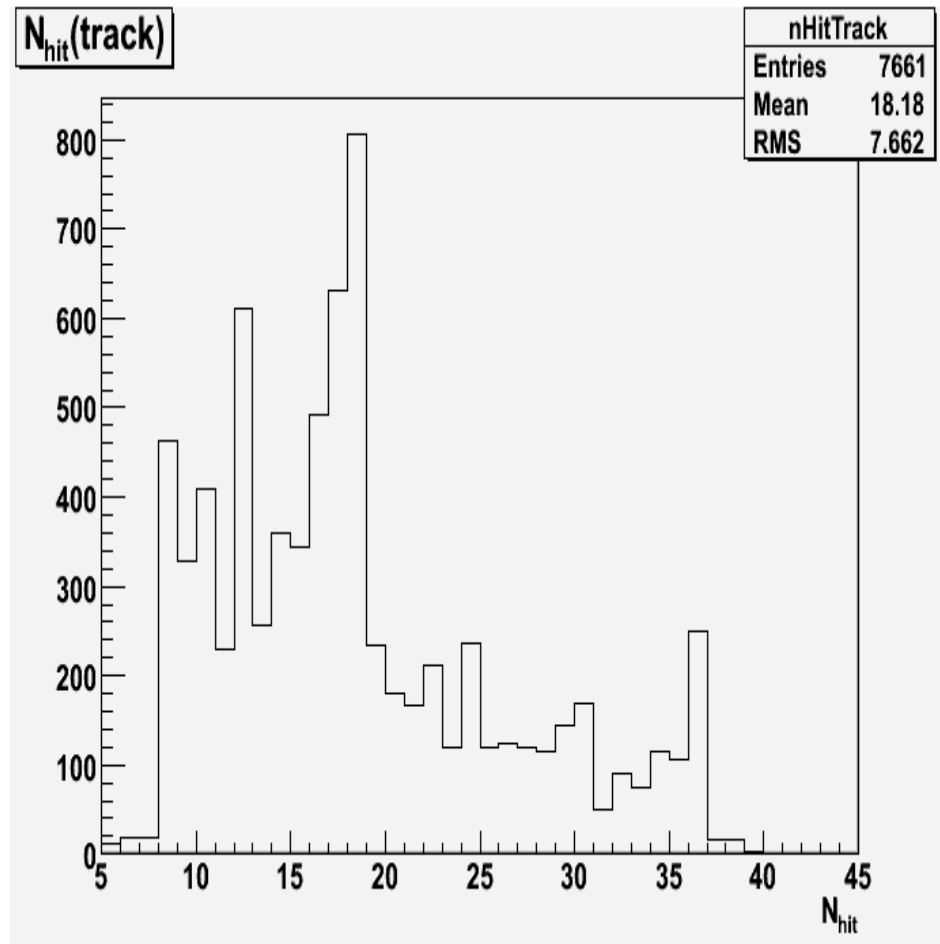
Track distributions

- Track distributions for selection (1)



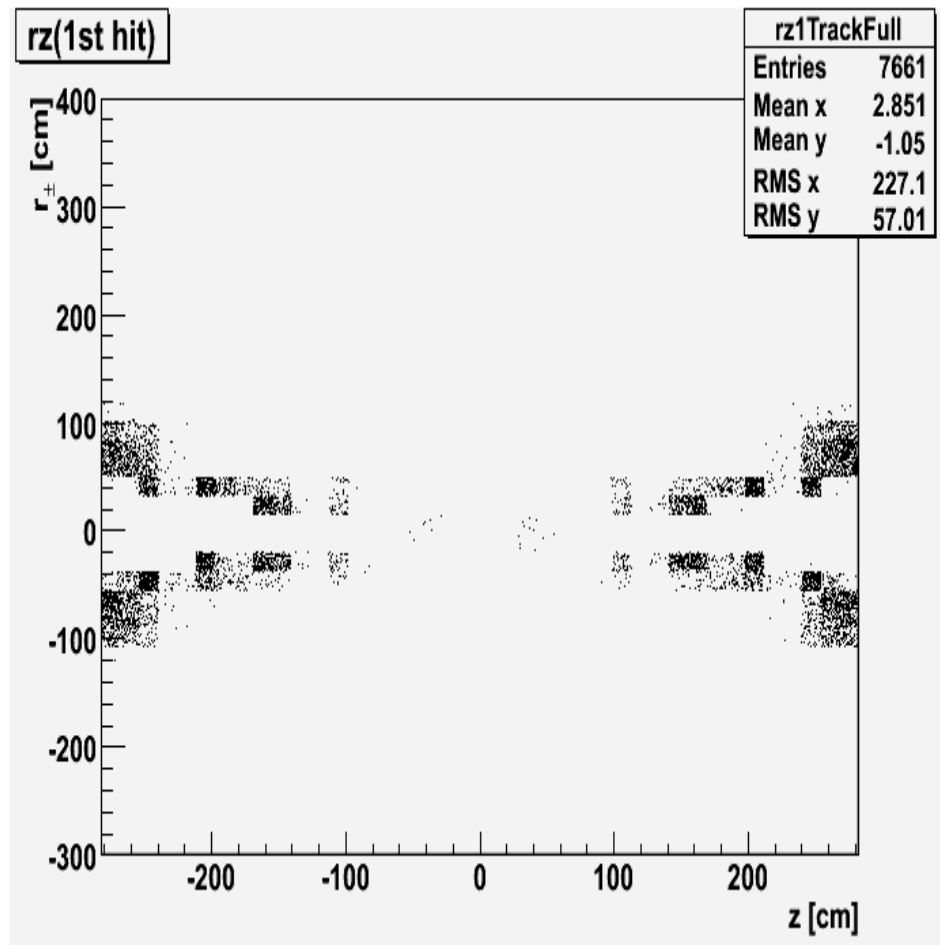
Track distributions

- Track distributions for selection (2)



Track distributions

- Track distributions for selection (2)



Trigger/Track selection

- Running only on the first 3796 events in data set...
- Track selection:
 - (1) $p_{\text{Min}}=2.5$, $n_{\text{HitMin}}=8$, $\text{minHitsPerSubDet.inTECplus}=1$, $\text{minHitsPerSubDet.inTECminus}=1$: 22 selected tracks
 - (2) $p_{\text{Min}}=2.5$, $n_{\text{HitMin}}=8$: 41 selected tracks.
 - (3) $p_{\text{Min}}=1.0$, $n_{\text{HitMin}}=8$: 111 selected tracks.

Conclusion / Plans

- Tracks looks reasonably as expected with selection (1)...
- ... but efficiency very low! 3.500 tracks in 2 ½ months, in 500k events.
- Even with very loose cuts (3), the number of tracks remains small (maybe a factor 5x → 20k tracks).
- What to do?
 - better event selection...
 - ... then reduce prescale