



CRAFT09 data - track quality

C. Kleinwort

DESY/HH alignment meeting 05.01.10

Overview

★ Track (re)fits

- CMSSW Track Refitter
 - ✦ Strip hits are 2D, APE used
- Broken Lines (MP II refit, Runga-Kutta prop.)
 - ✦ Strips hits are 1D, no APE

★ Plot

- χ^2 , Prob(χ^2 , ndf) vs track parameters

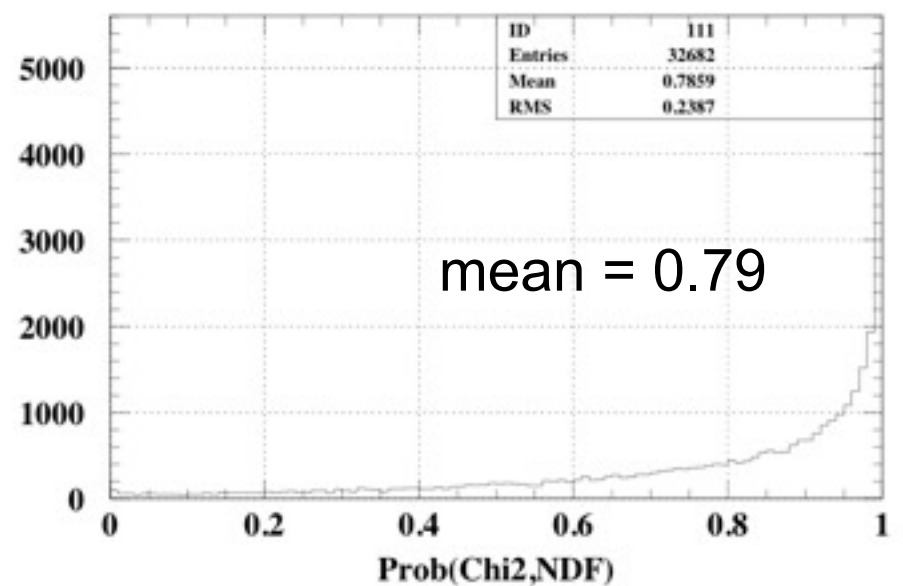
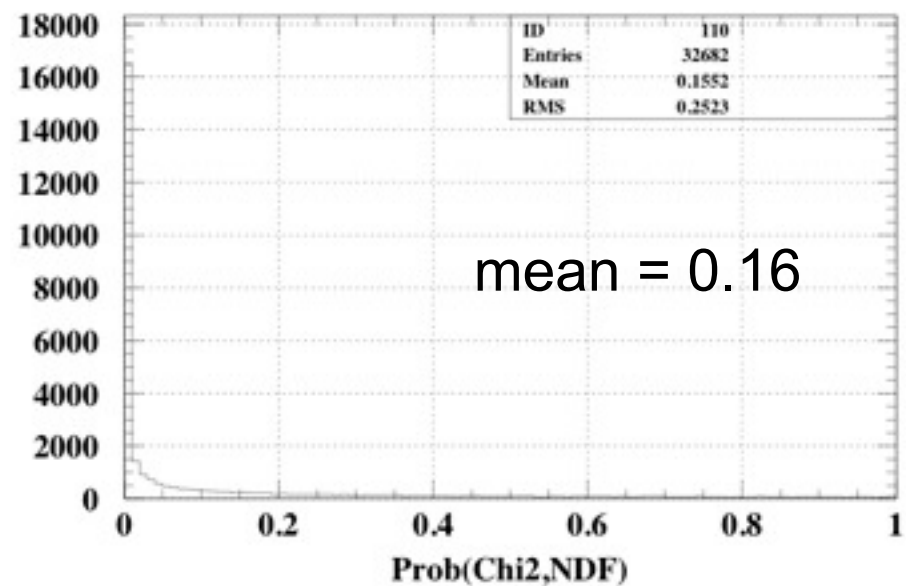
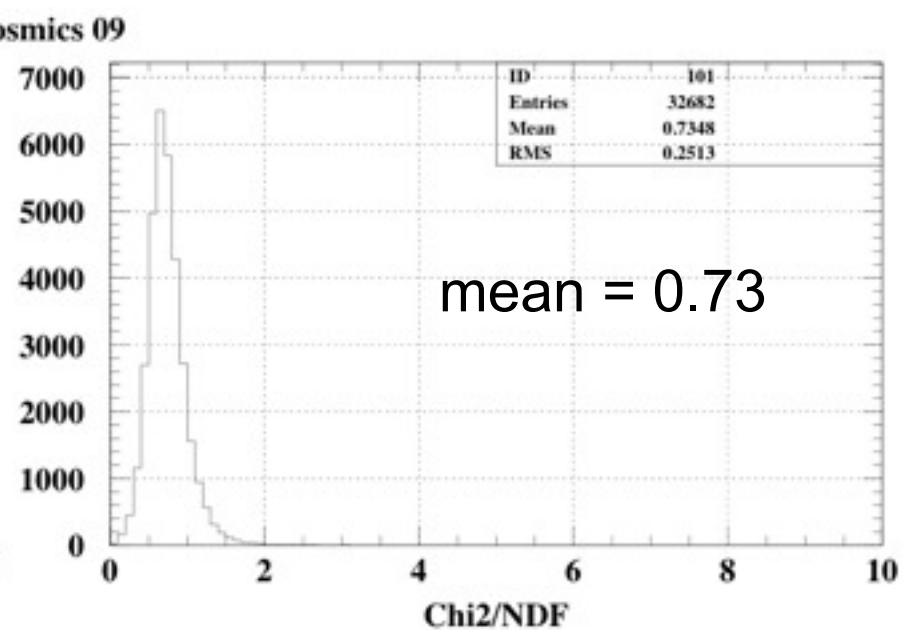
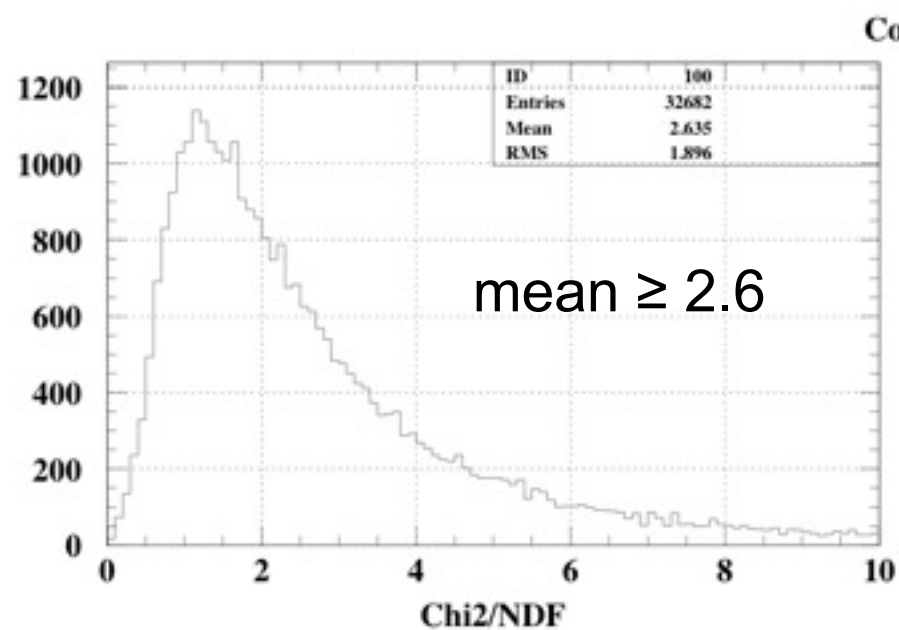
★ Dataset

- CRAFT09 data (same as F. M. (mp0013), 30k tracks)

χ^2 , Prob

Broken Lines

Refitter

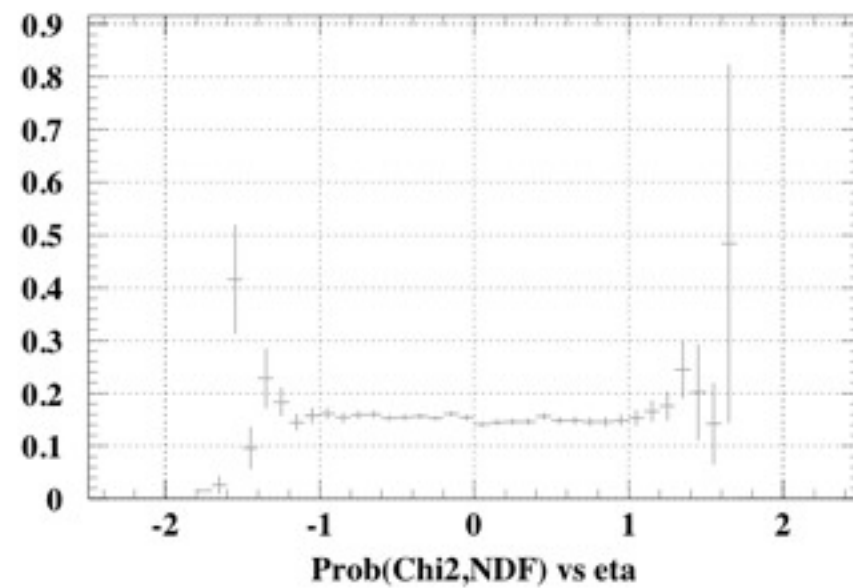
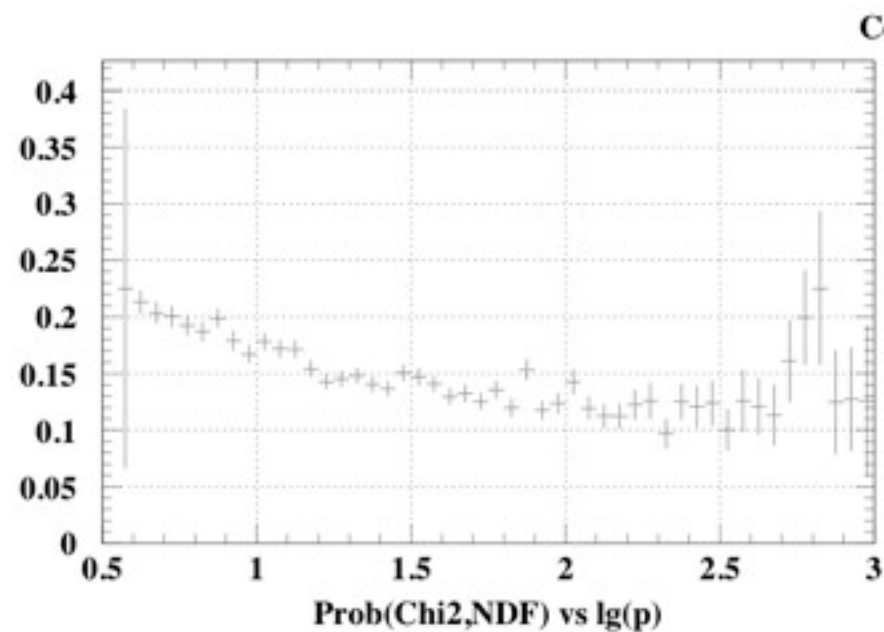


χ^2

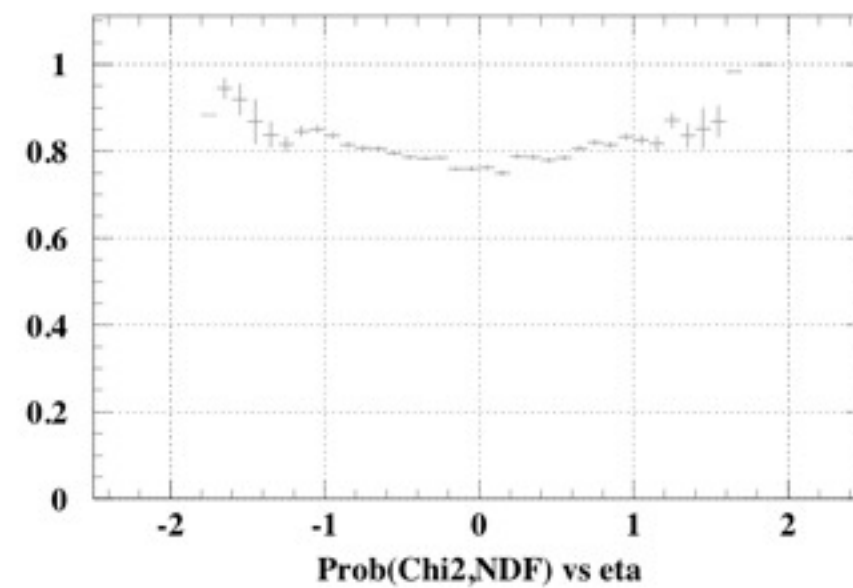
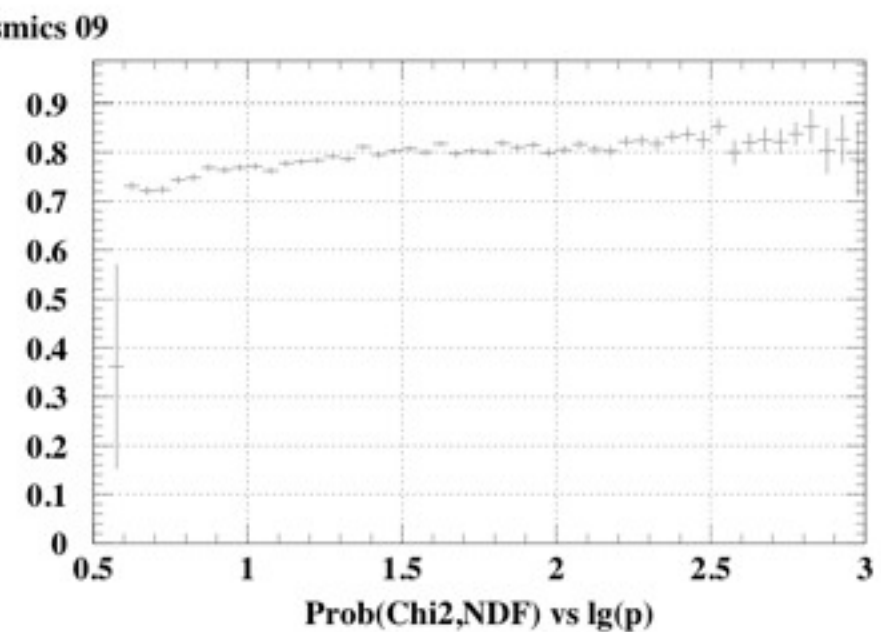
Prob
(χ^2 ,ndf)

Prob vs $\log_{10}(p)$, η

Broken Lines



Refitter

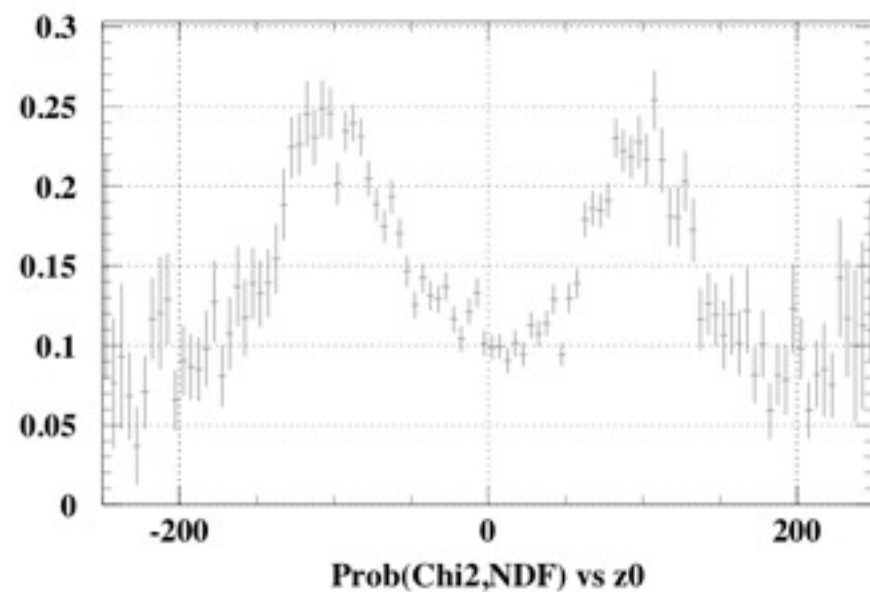
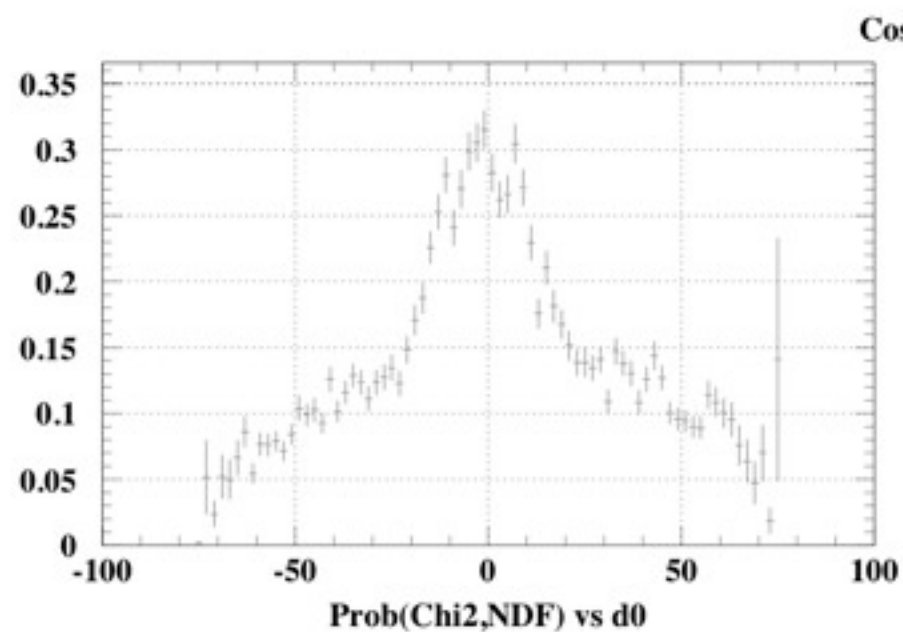


$\log_{10}(p)$

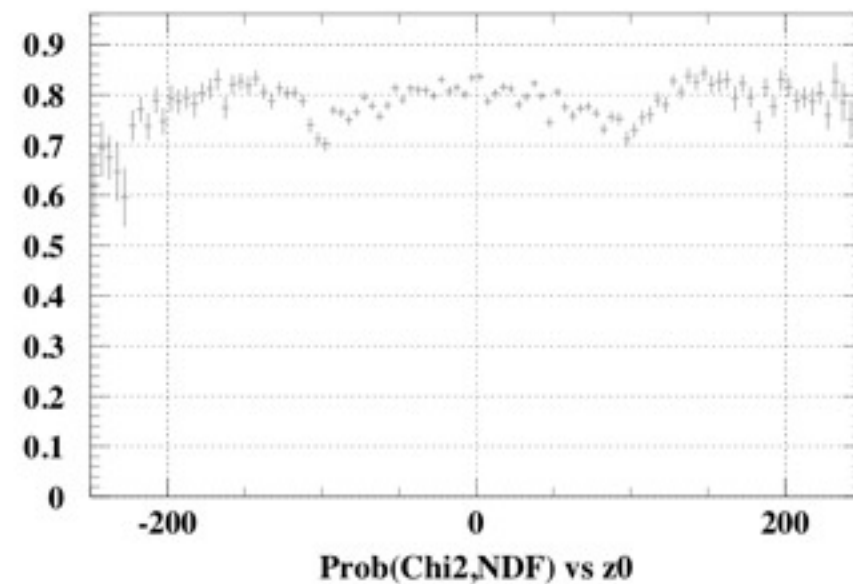
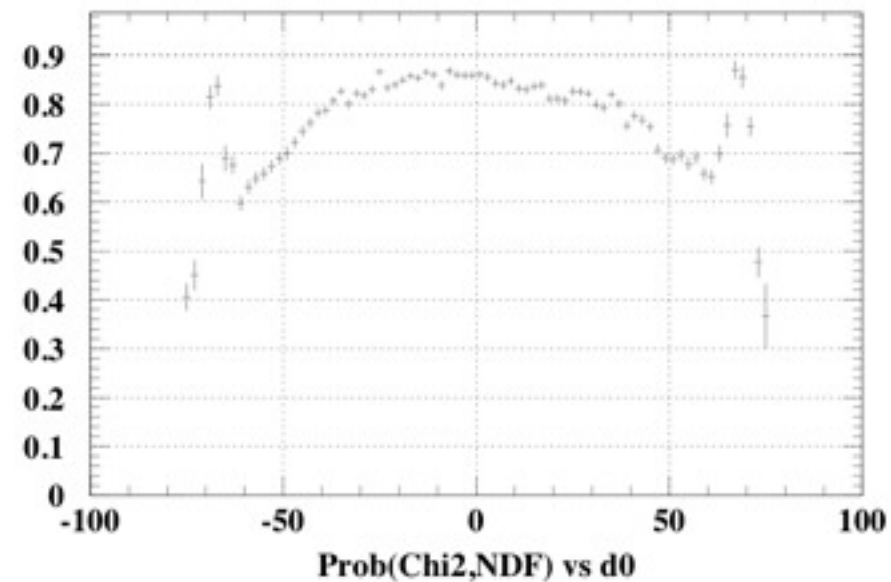
η

Prob vs d_0 , z_0

Broken Lines



Refitter



d_0

z_0

Summary

★ Refitter

- Errors (APE?) overestimated
- Weakly depending on track parameters

★ Broken Lines

- Errors underestimated (Misalignment ?)
- Problems in barrel ($|z_0| < 100\text{cm}$) and for large track angles ($|d_0| > 15\text{cm}$)

★ Reminder

- Refitter and Broken Lines are equivalent

(Comparison Broken Lines and track Refitter, <https://indico.desy.de/conferenceDisplay.py?confId=2468>)