



SCIPP Simulation Studies for the SiD Design

**SLAC SiD Workshop
October 26-28, 2006
Bruce Schumm**

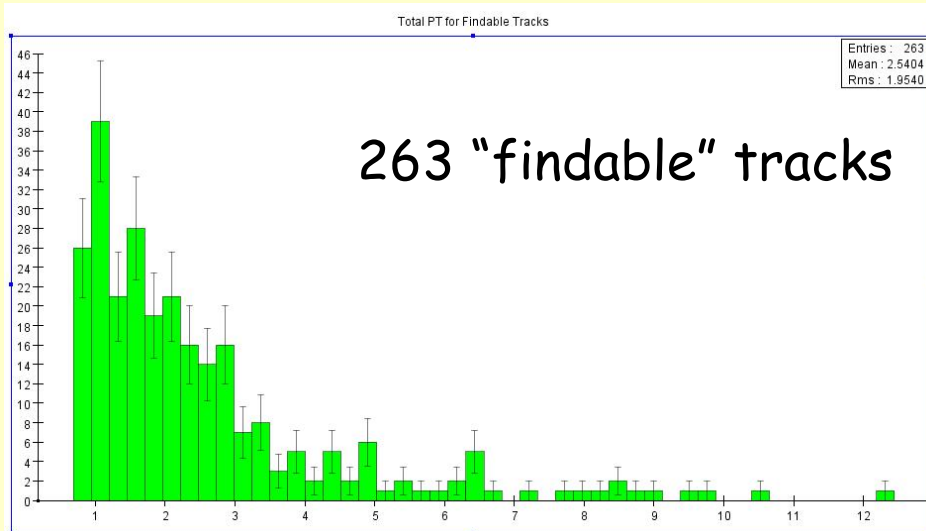
Personnel: B.S. plus three junior physics majors
Lori Stevens (worked over summer)
Tyler Rice (work over summer)
Chris Meyer (new)

We are:

- continuing the study of the use of Tim Nelson's AxialBarrelTracker as a clean-up algorithm (Lori, Tyler)
- trying to implement and verify new tracking algorithms (which ones?) - Chris

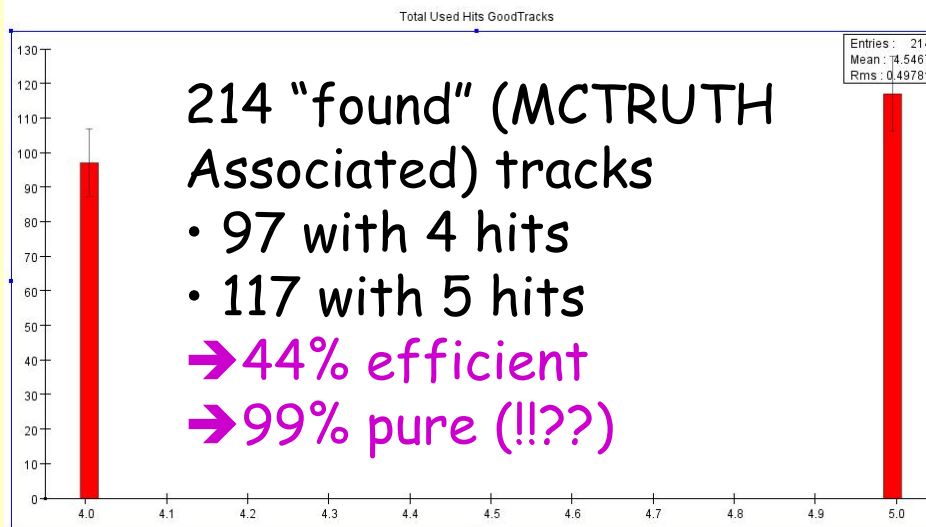
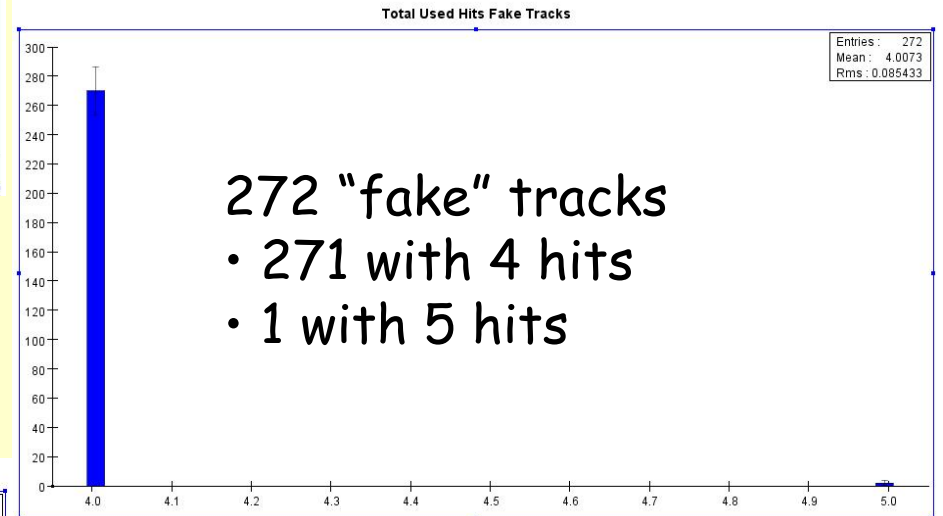
AxialBarrelTracker Studies

- Still "cheating": eliminating all hits from the 95% of tracks that originate within 2cm of origin
- Trying to do full classification of remaining hits (non-prompt tracks, loopers, backgrounds, etc.)
- Looking for remaining non-prompt tracks with $p_{\perp} > 0.75 \text{ GeV}/c$ and $|\cos\theta| < 0.5$
- Have verified that circle-fit χ^2 behaves like a χ^2 (tracking conventions?); use χ^2 cut, but not very effective
- Require 4 or more hits; found track can have at most one hit from a different MCTRUTH source; otherwise labeled as fake



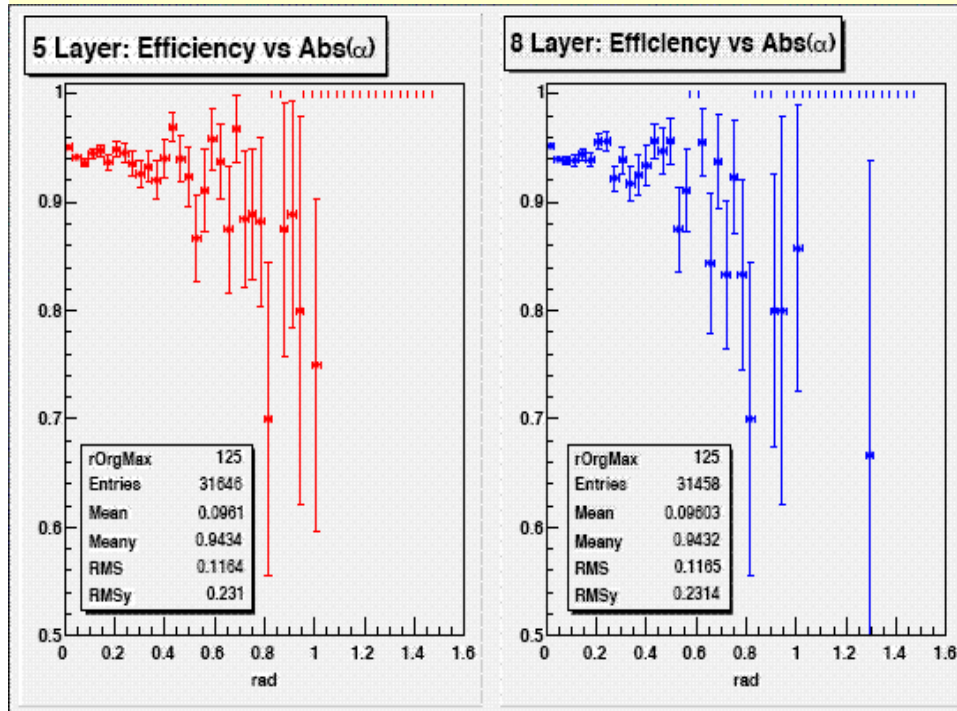
$e^+e^- \rightarrow qq$ at
 $\sqrt{s} = 500 \text{ GeV}$

Very preliminary!



Is this correct?
 What about an 8-
 layer tracker?

Algorithm Verification



Chris Meyer in process of learning to run code developed by Michael Young to study recon/fitter performance.

NOTE: The studies shown here for VXD-BasedReco are old and are shown for demonstration purposes only!

