RICH Alignment

Sharon Seun

June 8, 2006

Study RICH alignment using TrkRBase Seg456:

- Compute x_{ring}-x_{Trk} and y_{ring}-y_{Trk}

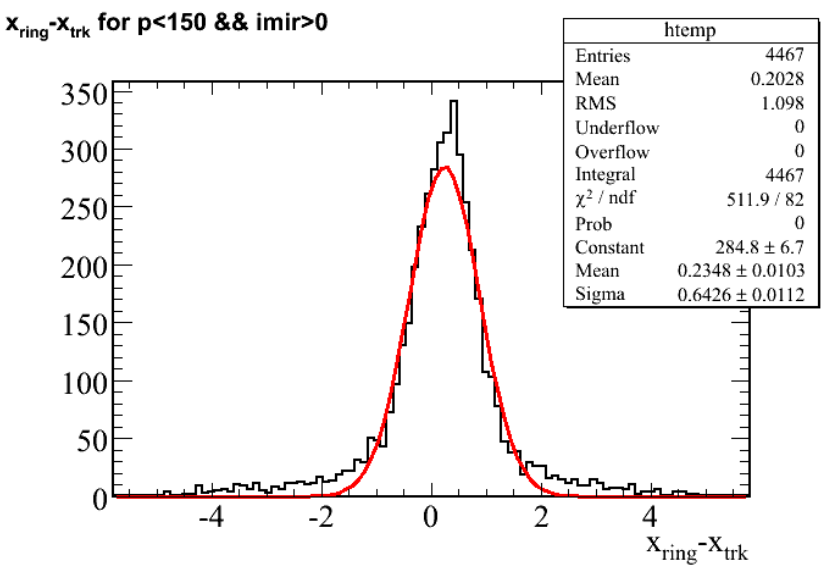
  (x_{ring}, y_{ring}) – RICH ring PMT digits

  (x_{Trk}, y_{Trk}) – reflected track position
- Used first two subruns from run15007
- ~4500 events after the following Cuts:

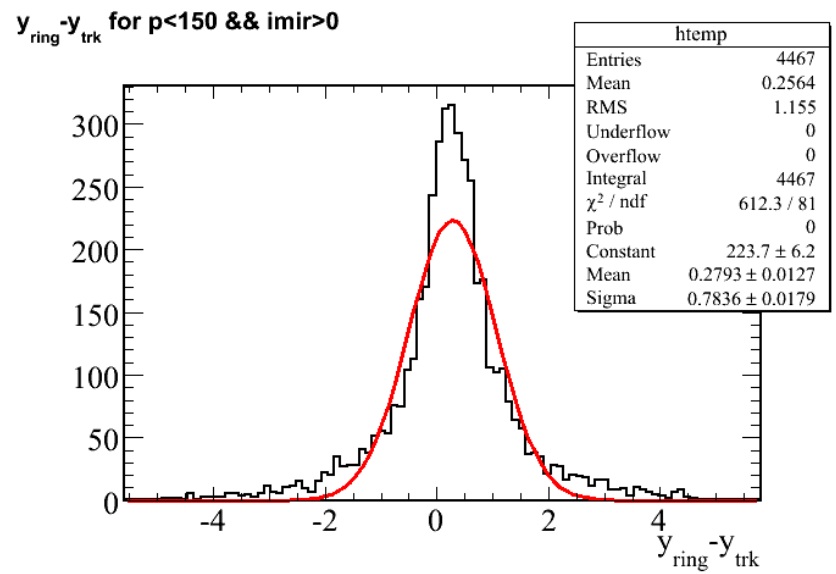
  1. p <= 150 GeV
  2. Track hit a valid mirror

Distribution on PMT

x_{ring}-x_{trk}



y_{ring}-y_{trk}

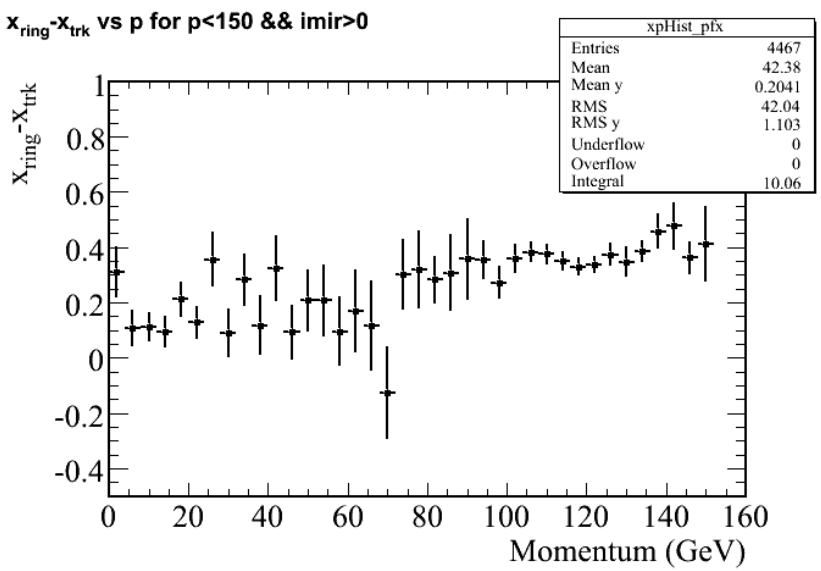


x_{ring}-x_{trk} is about the same as previous study with SPFit

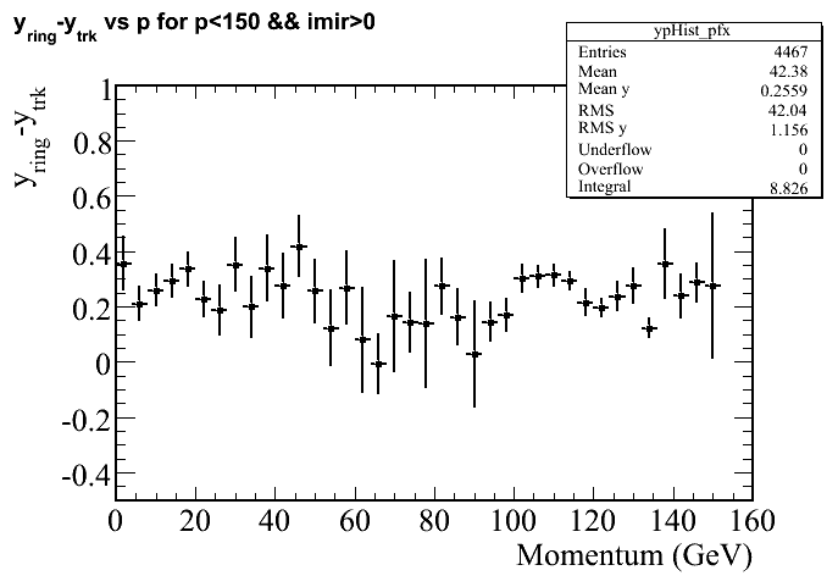
But y_{ring}-y_{trk} is smaller with TrkRBase

Momentum Dependence

x_{ring}-x_{trk}



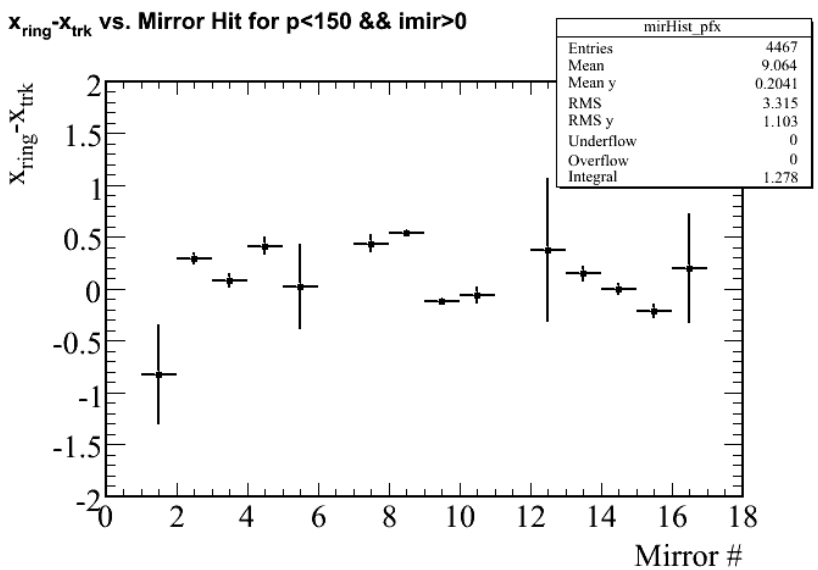
y_{ring}-y_{trk}



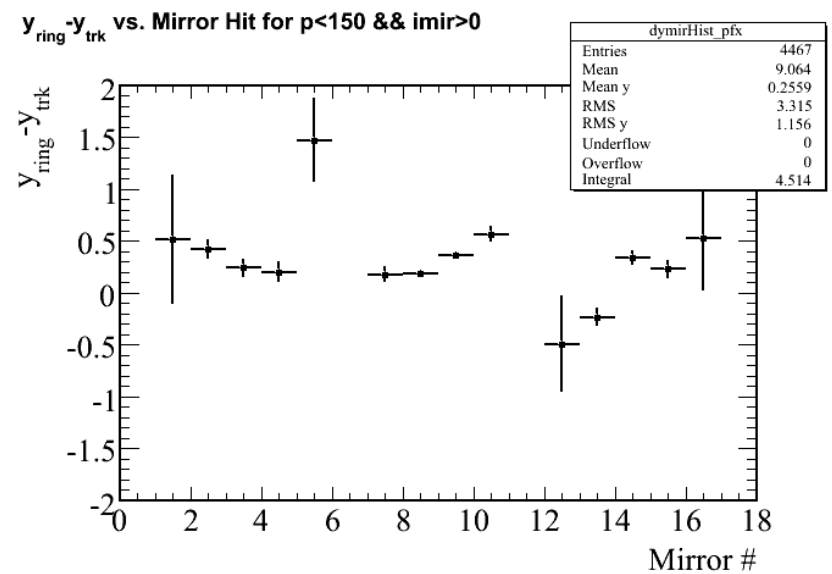
More statistics is needed to see the effect of momentum dependence!!!

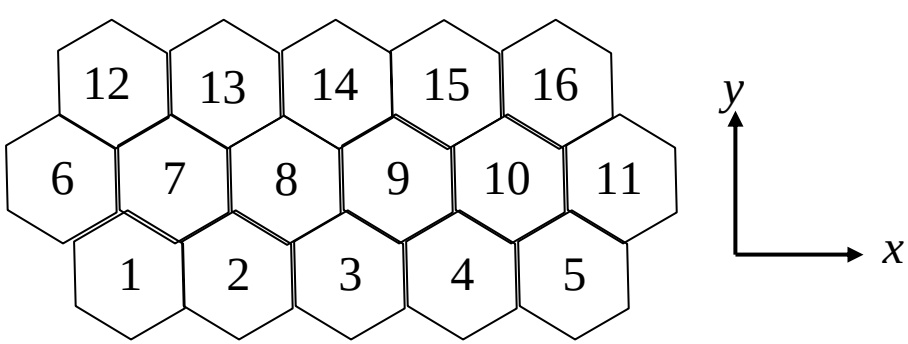
Mirror # Dependence

x_{ring}-x_{trk}



y_{ring}-y_{trk}





Similarly, more statistics is needed to see the effect of mirror dependence.

Conclusion

- TrkRBase Seg456 should give more precise study for RICH alignment
- Suggestion: include RICHMatchTrkRBase in Pass2 so more statistics will be gained for RICH alignment study. Alignment values can then be plugged in before Pass3.