

Definition of the cuts

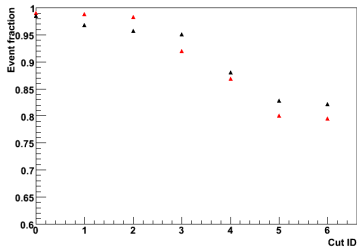
- ▶ Essentially the same as the ones Alex presented in the last meeting.
 - ▶ Where “essentially” means: no pre-cut, no cut on McEnergy, CalTrackAngle, AcdTotalEnergy and CalTotRLn

1. CalCfpEnergy > 10000
2. CalTransRms < 35
3. CalTrkXtalRmsE < 30
4. CalXtalRatio < 0.25
5. CallRmsAsym < 0.04
6. Tkr1ToTTrAve > 1.6
7. Tkr1CoreHC > 5

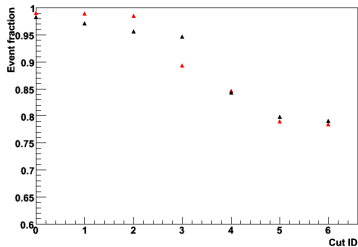
The idea would be to see how the fraction of the events passing the cuts scales as the cuts themselves are progressively applied. In the following slides: Data in BLACK, MC in RED

20 GeV electrons

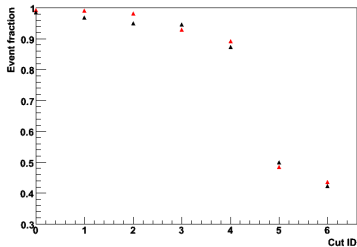
Run 2082 (20 GeV Electrons, 0 degrees)



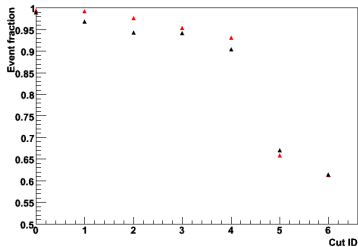
Run 2087 (20 GeV Electrons, 10 degrees)



Run 2092 (20 GeV Electrons, 20 degrees)

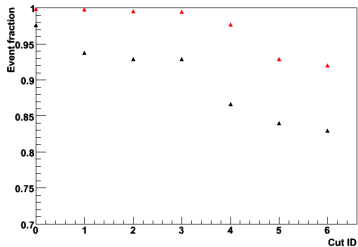


Run 2096 (20 GeV Electrons, 30 degrees)

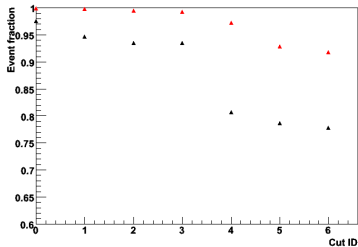


50 GeV electrons

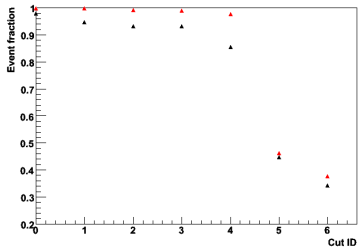
Run 2039 (49 GeV Electrons, 0 degrees)



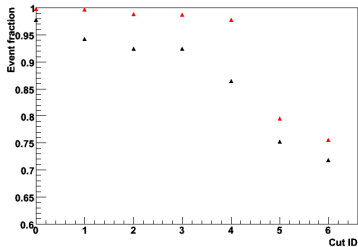
Run 2044 (49 GeV Electrons, 10 degrees)



Run 2050 (49 GeV Electrons, 20 degrees)

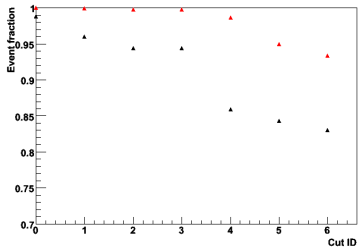


Run 2054 (49 GeV Electrons, 30 degrees)

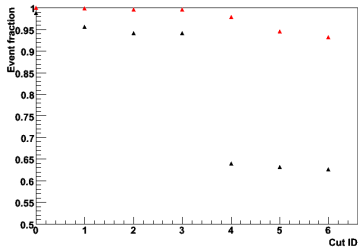


100 GeV electrons

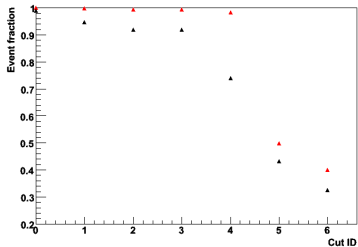
Run 1981 (99 GeV Electrons, 0 degrees)



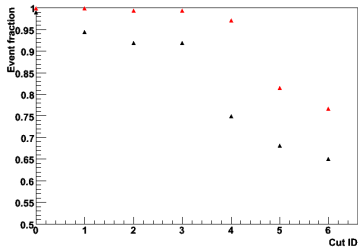
Run 1988 (100 GeV Electrons, 10 degrees)



Run 1993 (100 GeV Electrons, 20 degrees)

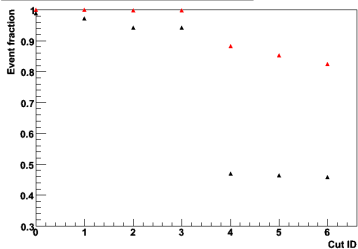


Run 1999 (99 GeV Electrons, 30 degrees)

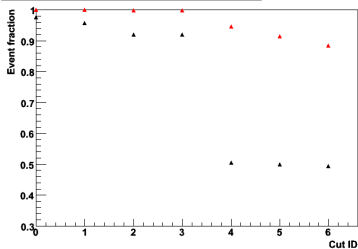


200 GeV electrons

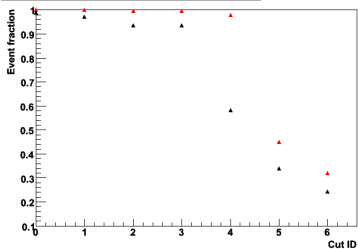
Run 1911 (196 GeV Electrons, 0 degrees)



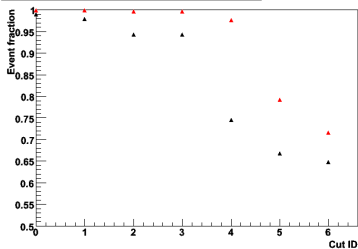
Run 1892 (196 GeV Electrons, 10 degrees)



Run 1898 (196 GeV Electrons, 20 degrees)

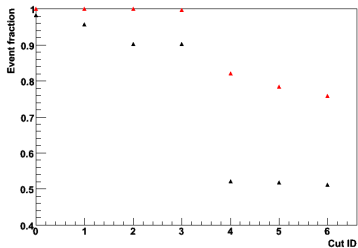


Run 1902 (196 GeV Electrons, 30 degrees)

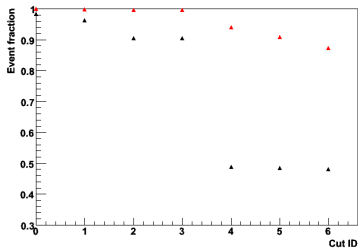


280 GeV electrons

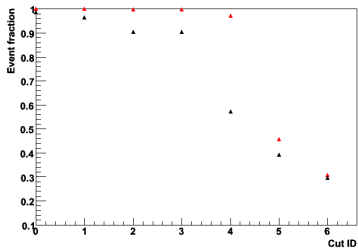
Run 1922 (282 GeV Electrons, 0 degrees)



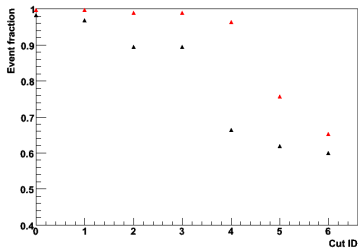
Run 1932 (282 GeV Electrons, 10 degrees)



Run 1938 (282 GeV Electrons, 20 degrees)

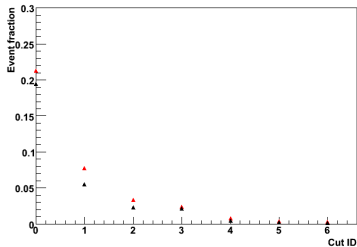


Run 1942 (282 GeV Electrons, 30 degrees)

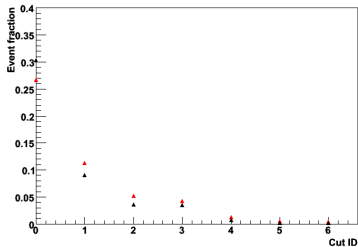


Protons

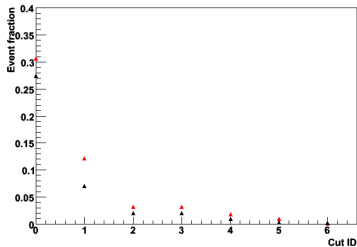
Run 2363 (100 GeV Protons, 0 degrees)



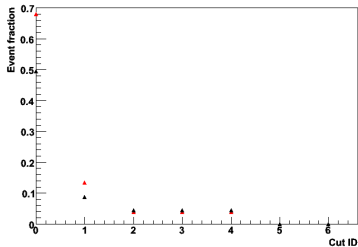
Run 1755 (150 GeV Protons, 0 degrees)



Run 2364 (100 GeV Protons, 45 degrees)



Run 2365 (100 GeV Protons, 90 degrees)



(Tentative) conclusions

- ▶ There are significant differences (up to a factor of two).
 - ▶ For electrons: worst at high energy, strong dependence on the incidence angle.
 - ▶ For protons: don't get confused by the y scale on the plot; after cut 6 there's typically a factor of two difference—can be in both directions, depending on energy/angle—and that affects the knowledge of the residual contamination.
- ▶ The next step is to try and scale the cuts according to the known discrepancies and see how much better the agreement is.