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1 Inner Detector tracks shared by electron and muon objects

Since muon and electron (calorimeter) reconstruction run independently, there is nothing that prevents two objects to be associated to the same track.

This effect was quantified and studied for the H-> 4l analysis in release 13.0.30. The shared tracks were found basically by looping over the objects in StacoMuonCollection and ElectronAODCollection and comparing the ID track pointers. The objects were classified according to their reconstruction quality and the origin of the effect was determined by looking at the MC truth information. Also, the H24l analysis were applied to those events.

Samples:

- H130 4l: 39k events
  - trig1_misal1_csc11.005300.PythiaH130zz4l.recon.AOD.v13003002_tid016454
- H130 4l + pile-up and cavern background: 48.7k events
  - trig1_pile1sf05_misal1_csc11.005300.PythiaH130zz4l.recon.AOD.v13003003_tid019098
- Zbb 4l: 79.6k events
  - trig1_misal1_mc12.005177.AcerMC_Zbb_4l.recon.AOD.v13003004

Presentation in Higgs WG

-- BrunoLenzi - 22 May 2008

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