

Strategy for improving the PFA

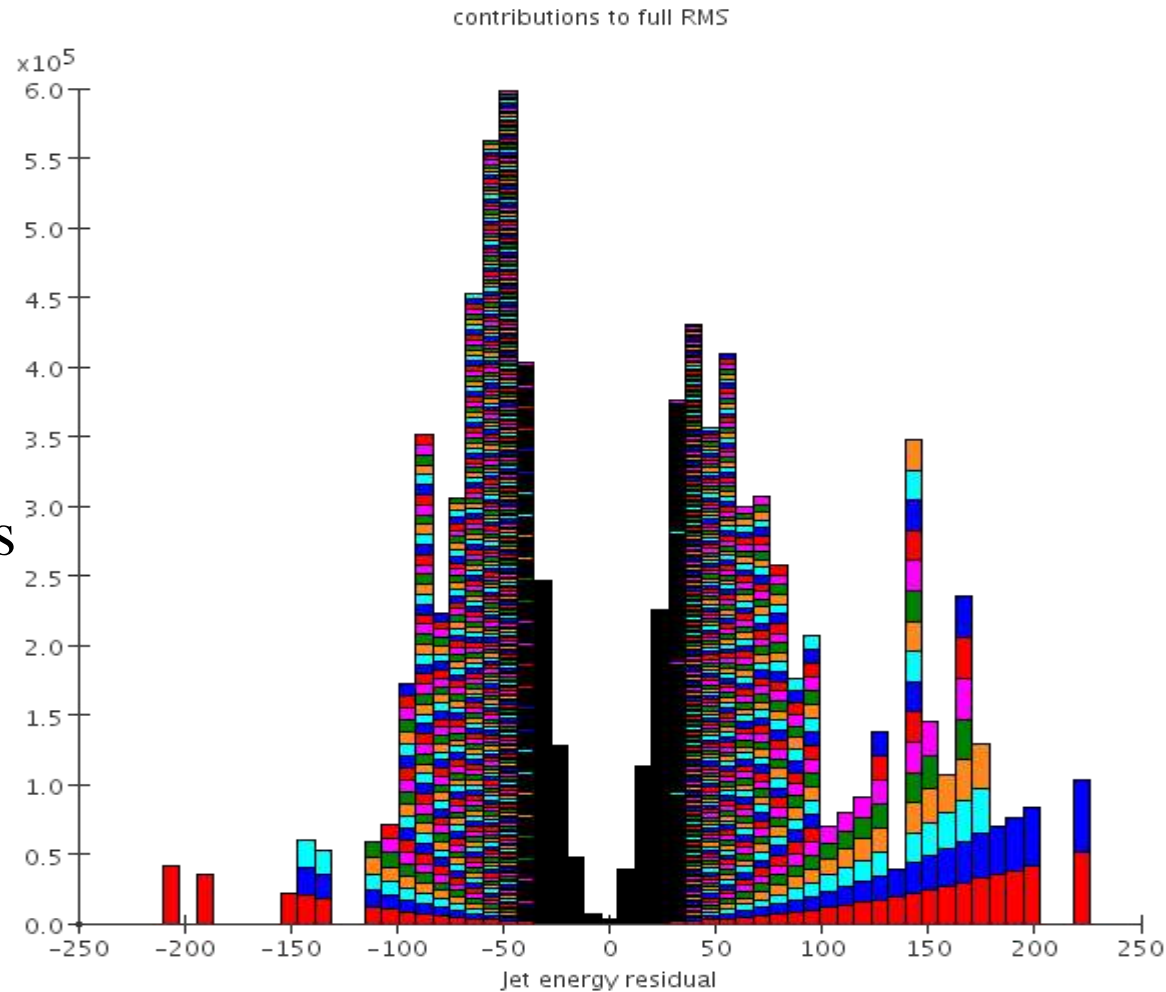
Work in parallel on:

- Special scan: Study outliers
- General scan: Study contributions to the energy resolution

Study outliers

(events with largely deviating reconstructed energy)

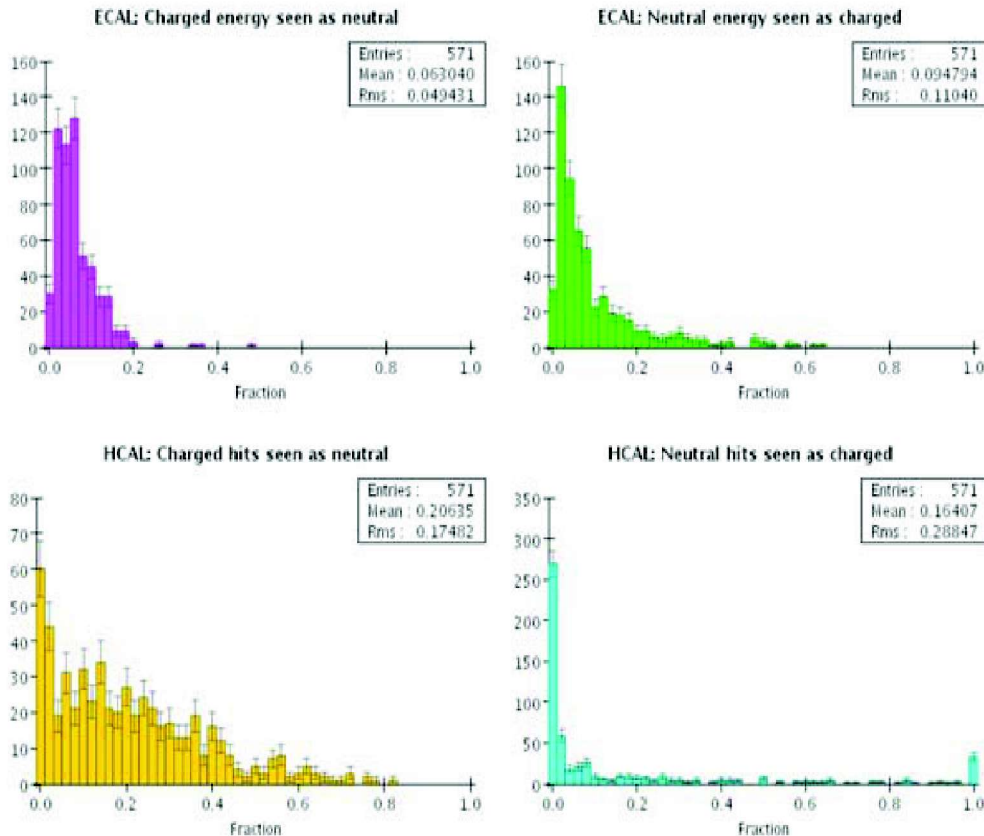
- x-axis: $E_i =$ reconstructed jet energy - true jet energy
- y-axis: $(E_i - \langle E_i \rangle)^2$, so bar height corresponds to RMS contribution
- one box (not color!) corresponds to one event
- some outliers contribute strongly and need to be studied
- however: more general scan necessary



Study contributions to the resolution

- Energy residual from
 - charged clusters: calibration issues ...
 - neutral clusters: different implementations possible ...
- Plan: measure confusion distributions and calculate resolution from them

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- Particle distribution, confusion distributions, neutral hadron resolution, photon resolution => energy resolution
- For comparison: PPR in various steps
- Gives quantitative access to resolution contributions

Figure 75 Confusion distributions for hadronic Z-pole events in the sidaug05 detector. For each event, the fraction of charged energy incorrectly identified as neutral (and vice versa) is measured in the ECAL. The same distributions are shown for the HCAL using the fraction of hits instead of energy.

(SiD DOD 2006, at Z-peak)