Work on the IOWA PFA:

Improving the cone algorithms

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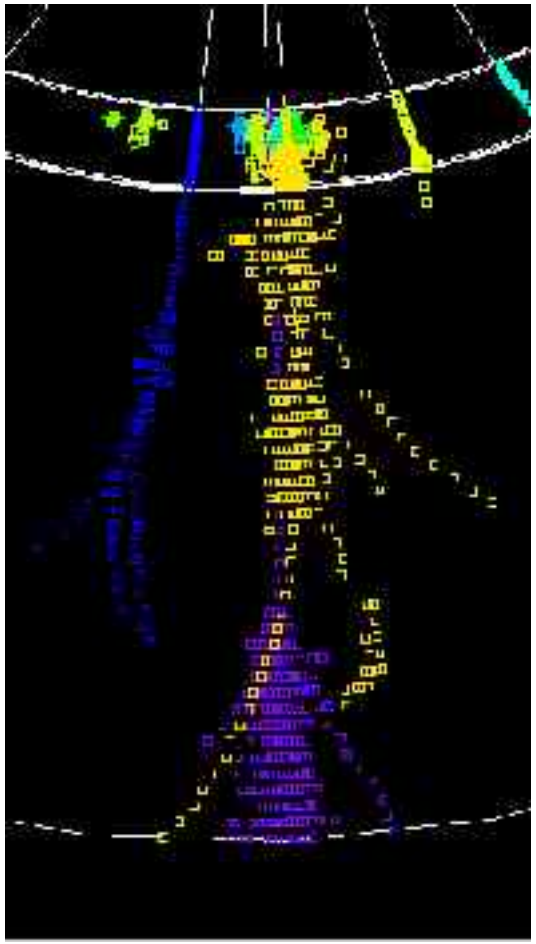
SiD PFA meeting

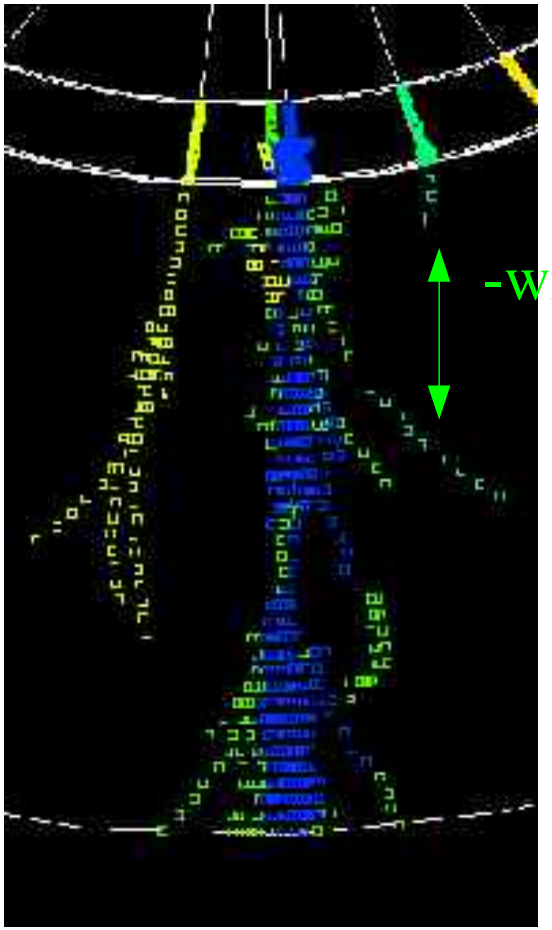
12/03/09

Problems with the "2nd cone algorithm"

$e^+ e^-$ -> qq at 500 GeV



Cheat clusters

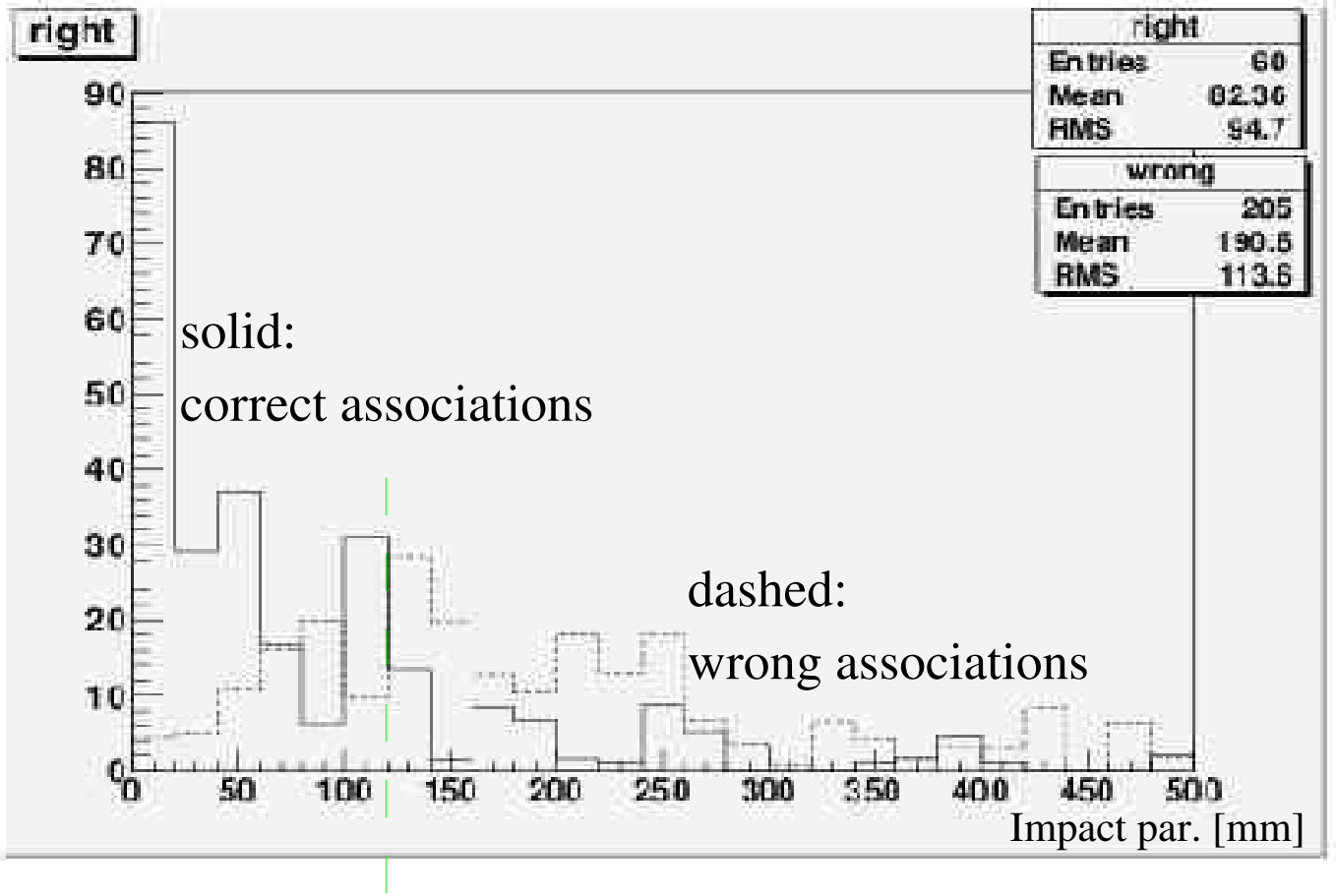


Reconstruction

Idea: Calculate impact parameter of lengthy clusters wrt. shower point, impose cut.

Impact parameter

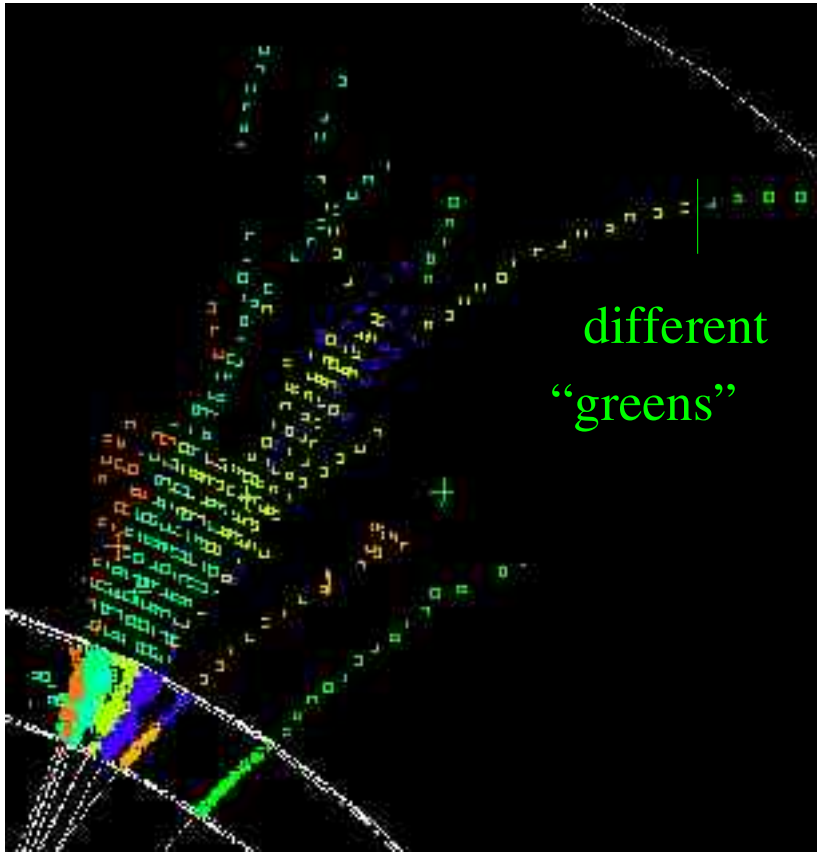
Comparing with truth information



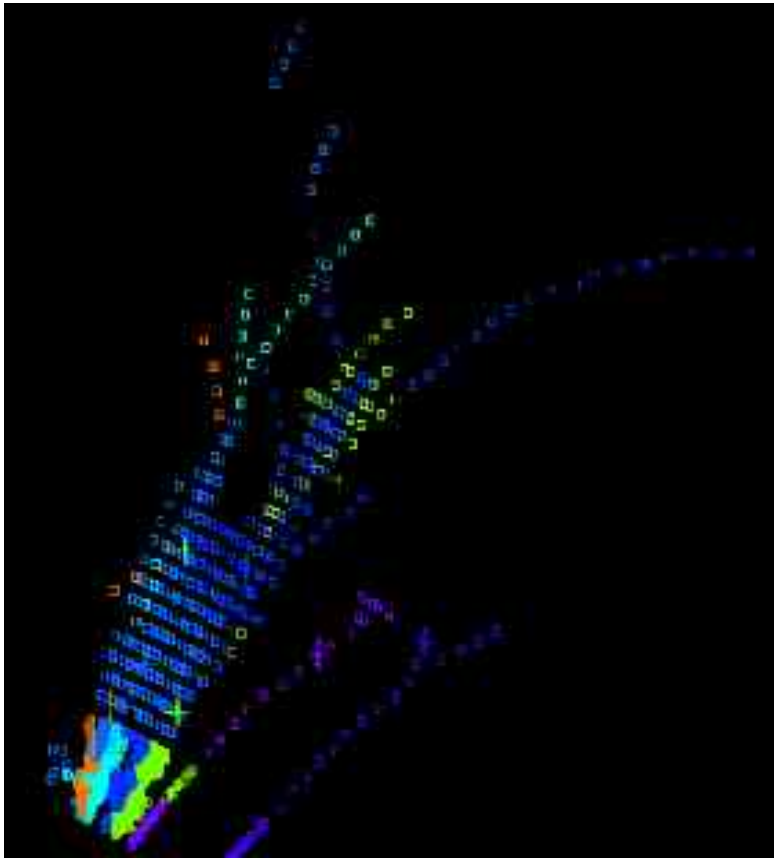
Beware: “signal” and “background” change by imposing cuts!

Comparing reconstructions

Original algorithm

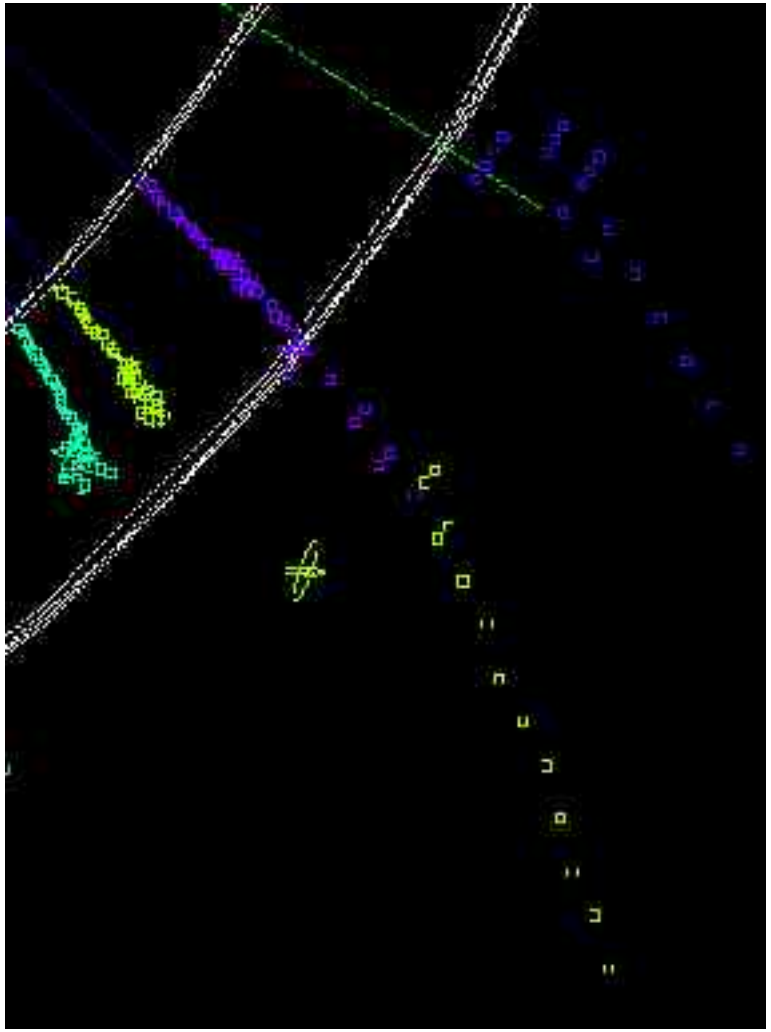


Modified 2nd cone algorithm



- Less errors in outer region
- Small changes: Resolution etc. unchanged
- Other problems remain: Try different variables, multi-dimensional cuts ...

"1st cone algorithm"



- More problematic: generates most of the mistakes, see Usha
- Try also cut on impact parameter!

- Also done:
  - Worked on identifying printouts/event-display
  - AIDA histos, large statistics
- Next:
  - MIP extension
  - aggressiveness 1st cone