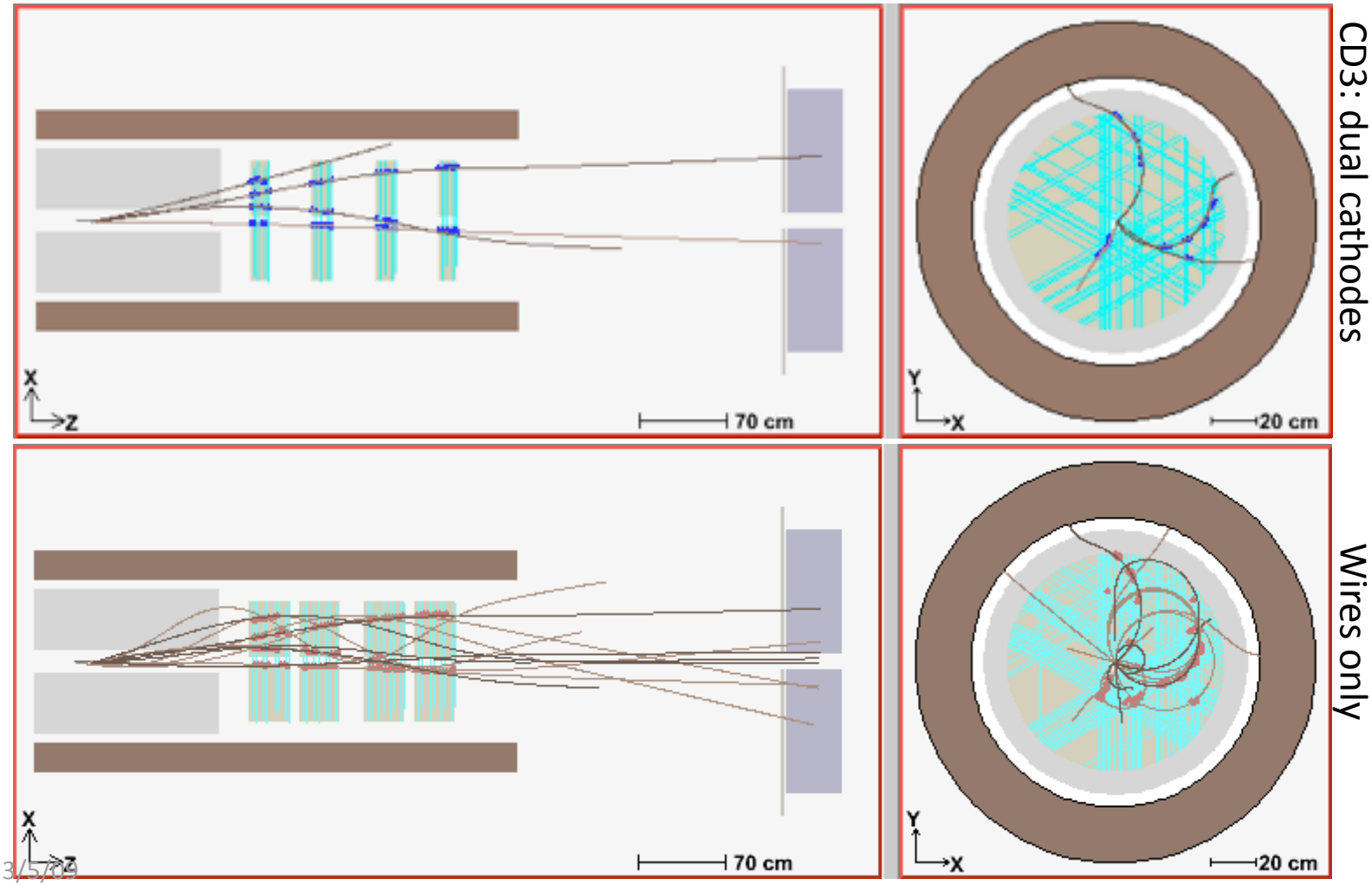
Single Event: Cathodes vs. Wires

It is easy to see the 4 tracks in both designs by eye. However, the "wires only" design has additional points from unresolved ambiguities that serve to confuse the track finding algorithm.



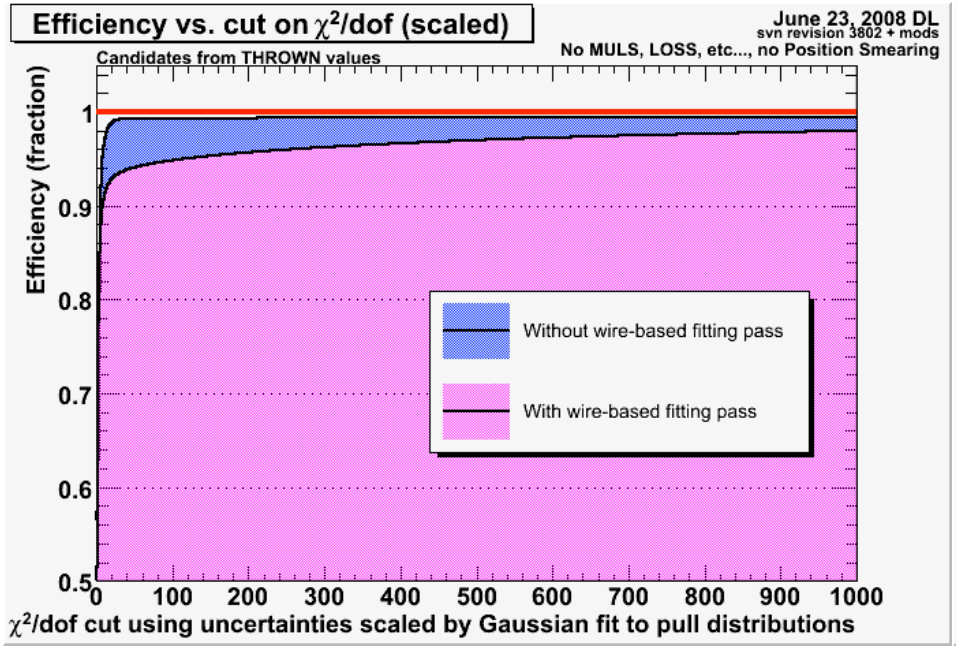
CD3: dual cathodes

Wires only

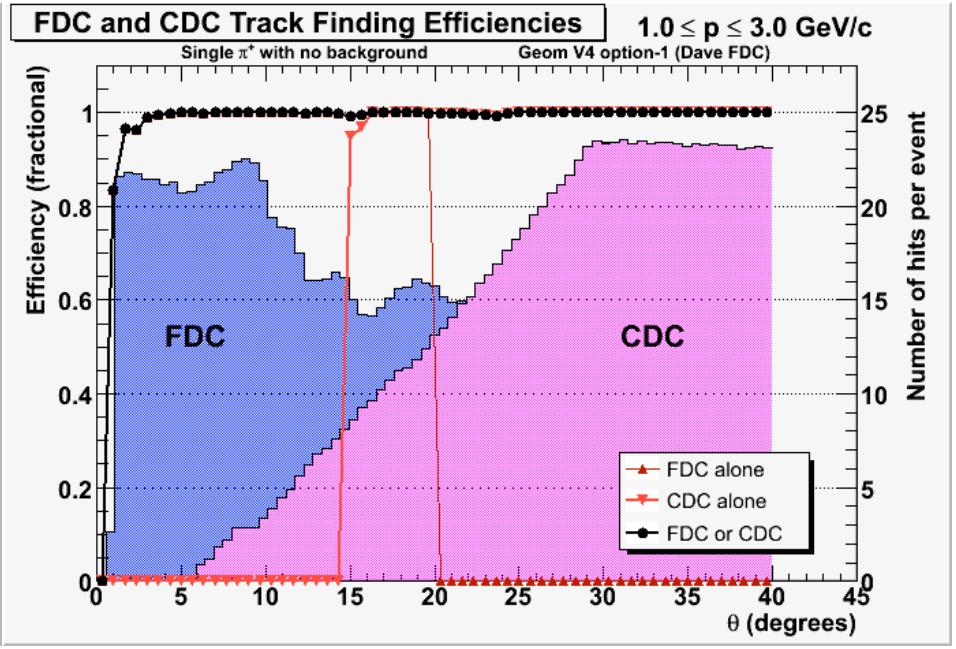
No background

Tracking Efficiencies(?)

CDC track fitting efficiency vs. parameter χ^2/N_{dof} cut

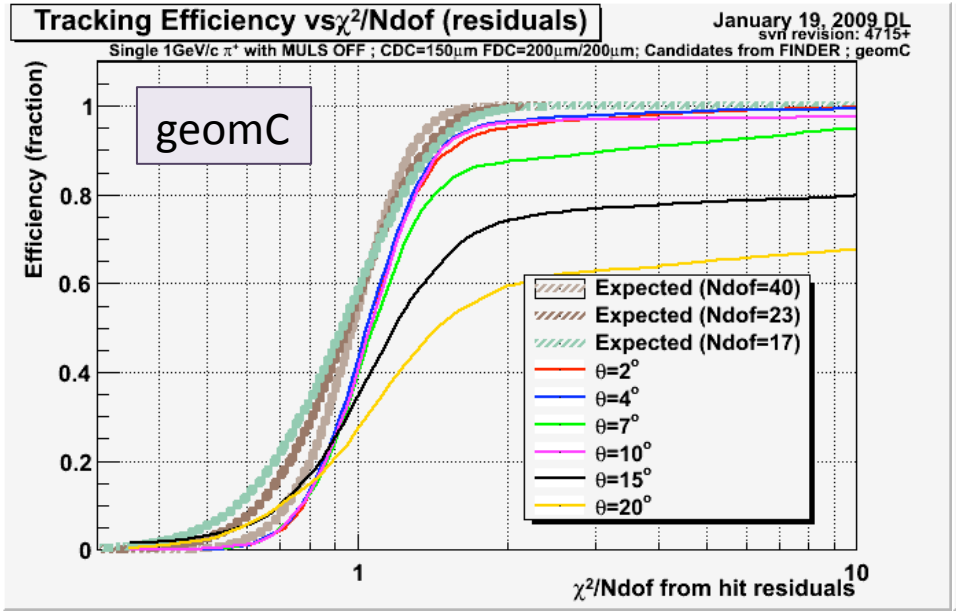


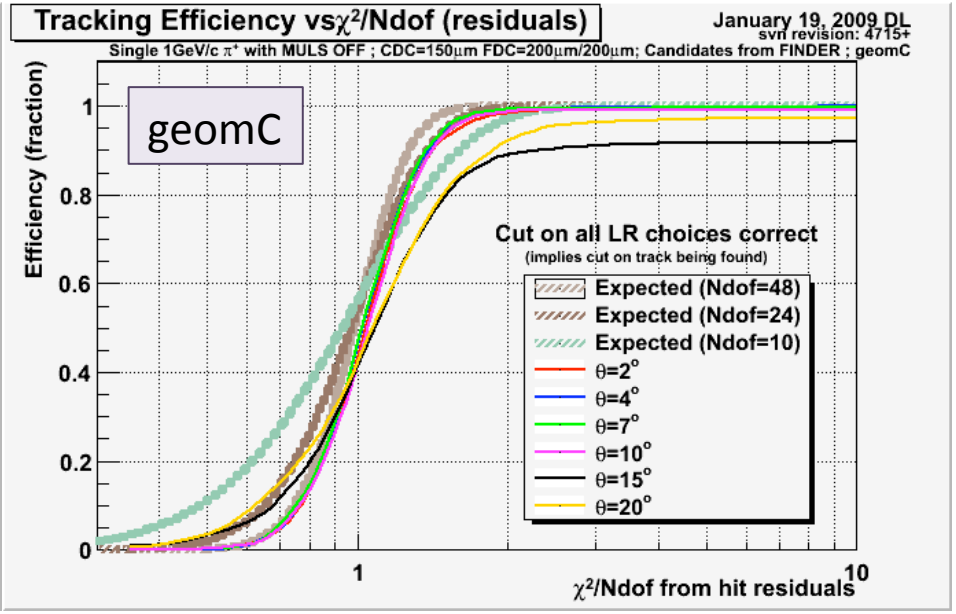
Criteria for efficiency: "were any tracks found?"



Locking in the LR choice

The current studies use a fitter that locks in the left-right choice based on the results of fitting to the wire positions. Looking only at tracks that were found ***and*** had the correct L-R choice made for all hits gives a limit on what might be achieved with a better algorithm.



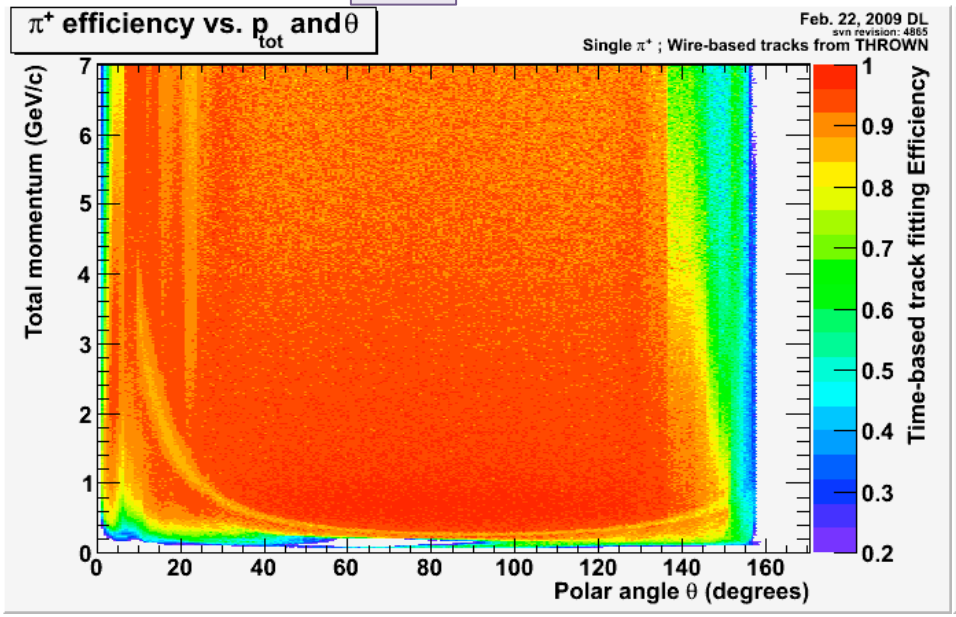


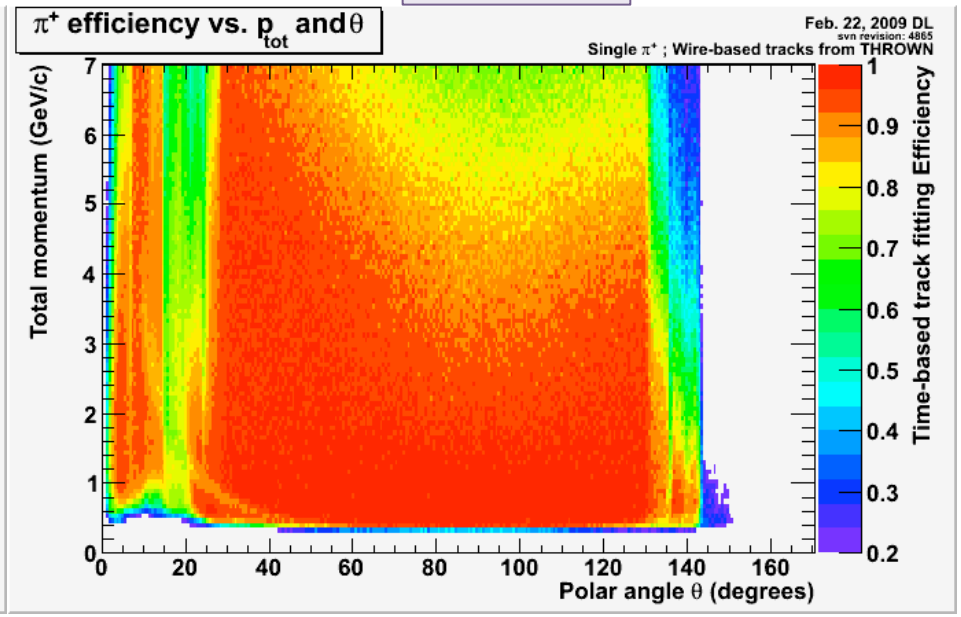
π^+,proton efficiencies

π^+

Tracking $\chi^2/N_{dof}<1000$ and reconstructed total momentum within 20% of thrown

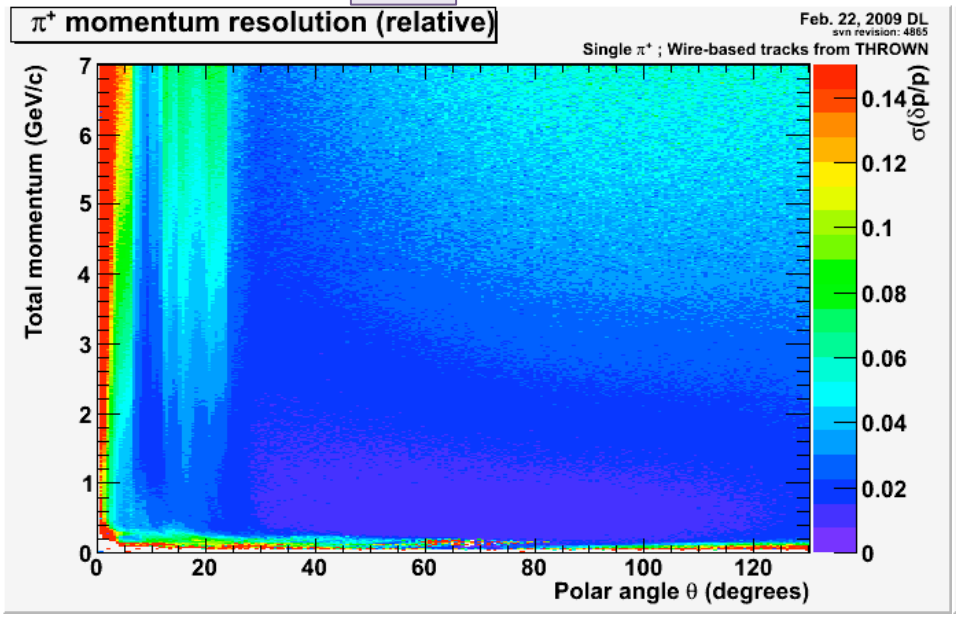
proton



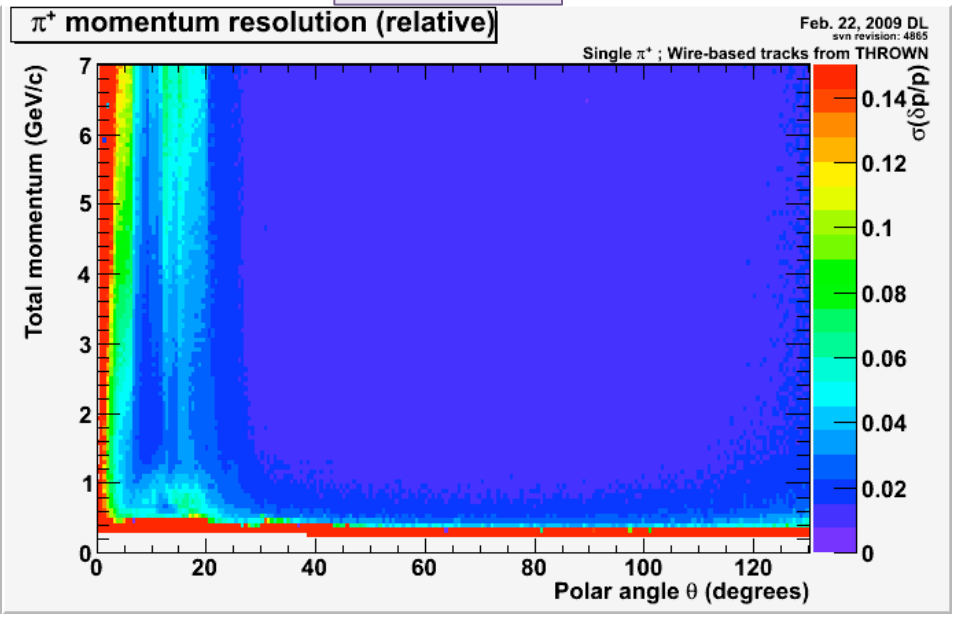


π^+,proton Momentum Resolutions

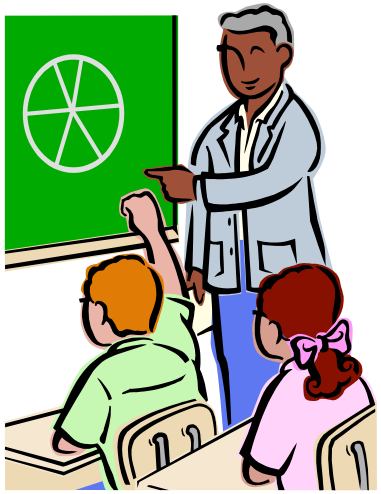
π^+



proton

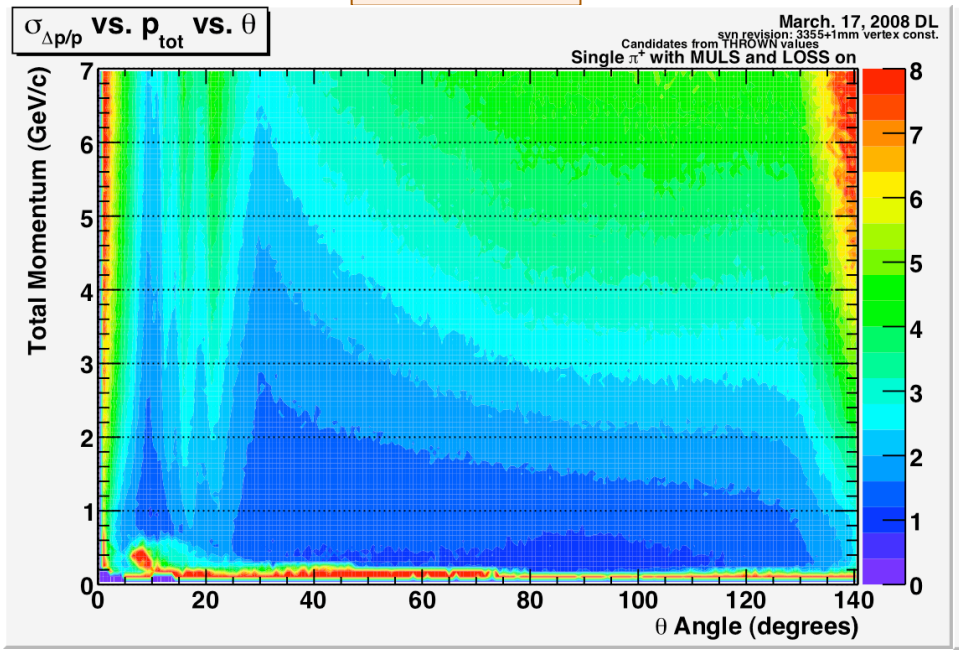


Backup Slides

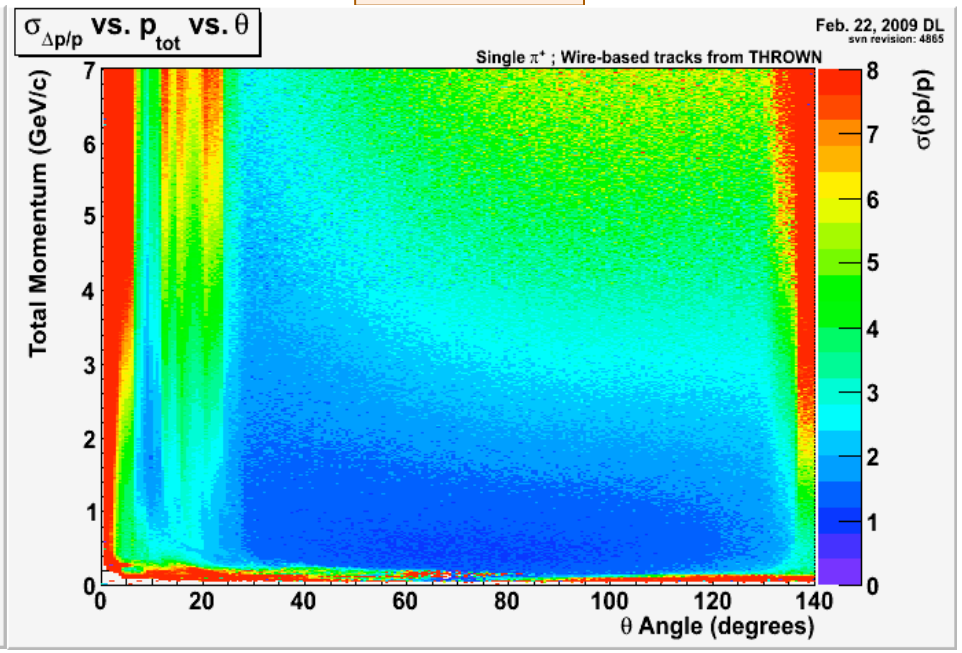


Relative, total momentum Resolution

Feb. 2008



Feb. 2009



Note: For technical reasons, the plot on the left uses “CONT” option to draw contours while the plot on the right colorizes by bin content.