First Looks at Backsplash using the 2006 Beam Test Monte Carlo
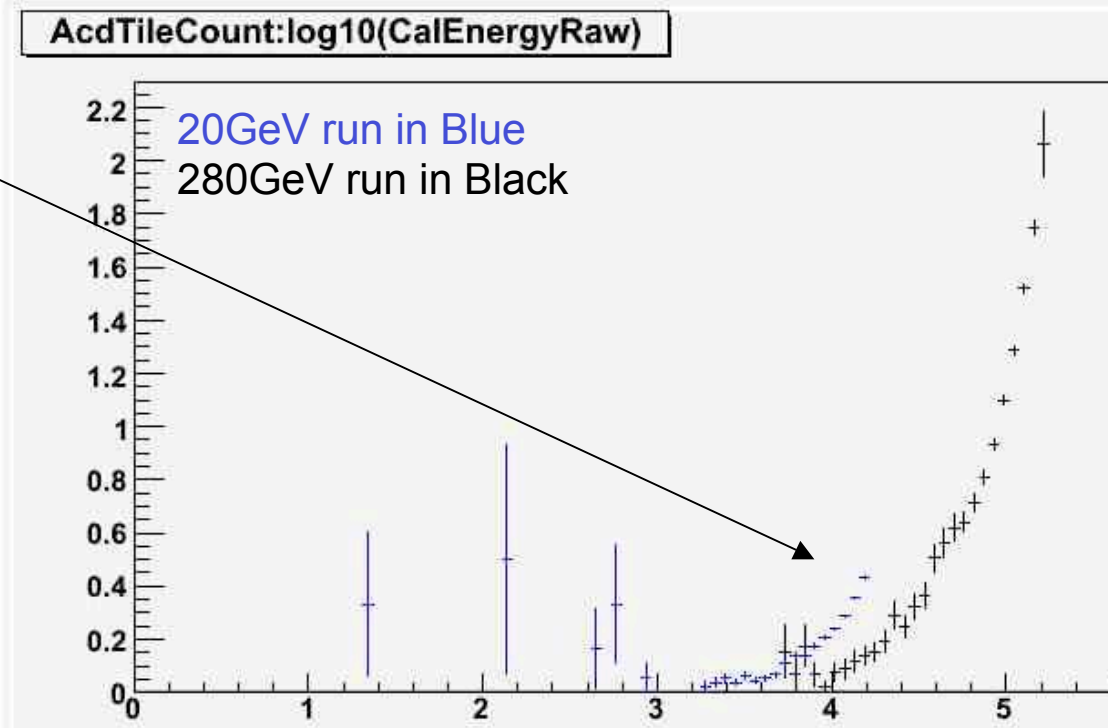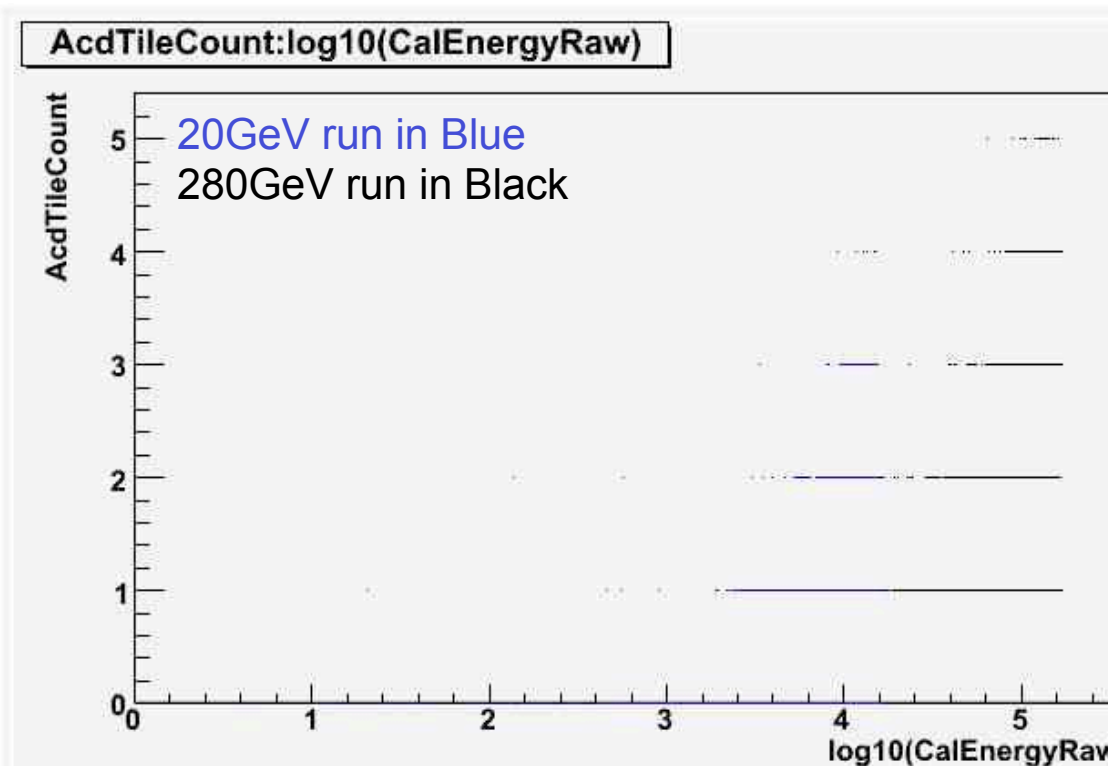
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[w/ Luis and Steve]

These plots were generated from the beam test simulations with the intent of looking at backsplash effect for different beam energies.
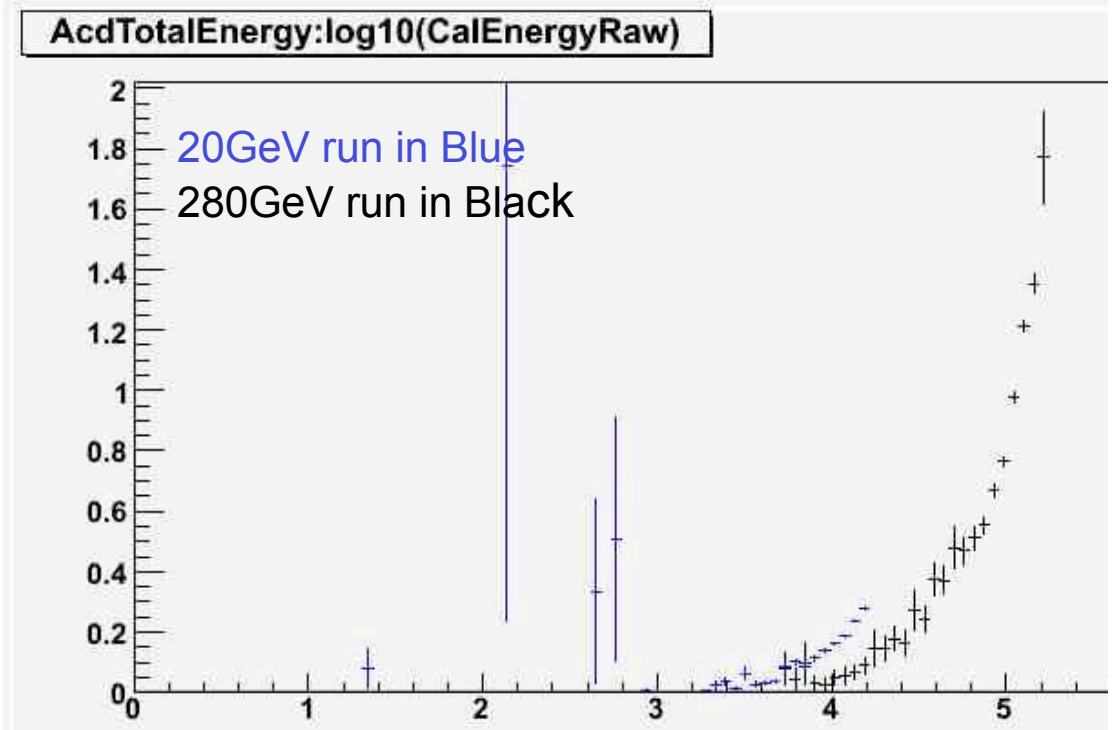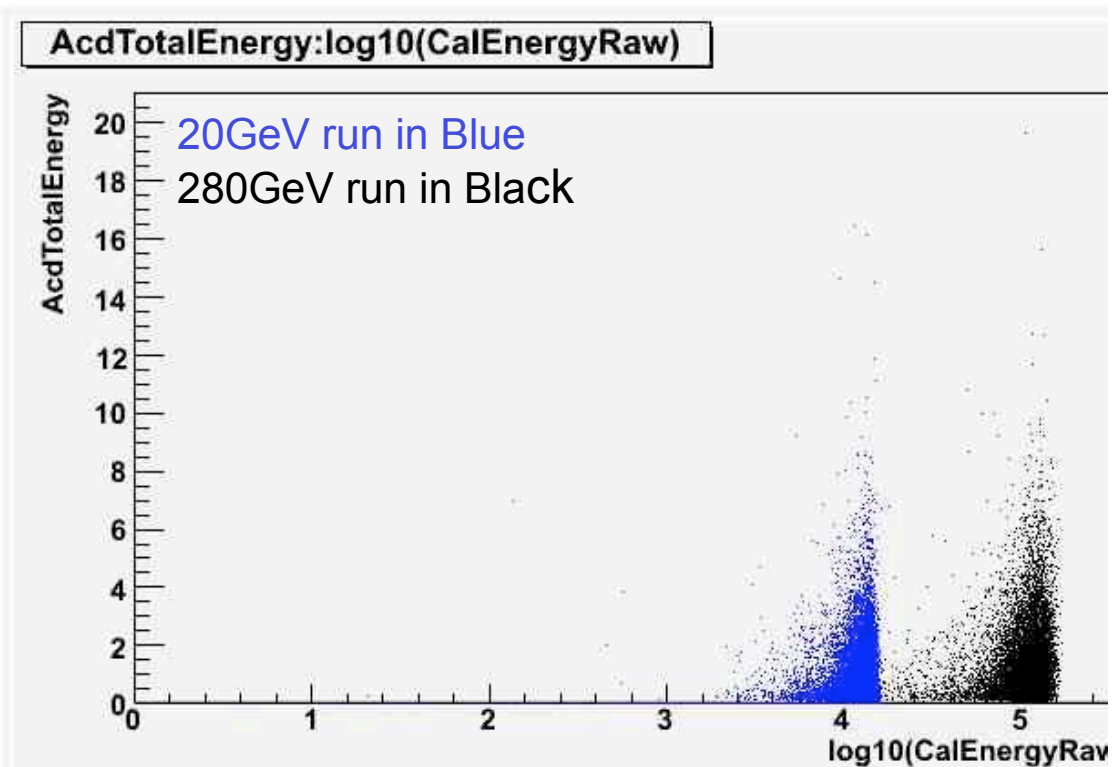
Naively, the amount of back splash should only depend on the amount of energy deposited in the calorimeter, not on the energy of the incoming beam.

The beam is entering the CU at the top of the TKR at x=201.2mm and y =0. The files used are from Beamtest runs 29 and 30:

• BeamTest-0029-full-merit.root (20 GeV e-   SPS)
• BeamTest-0030-full-merit.root (280 GeV e- SPS)

AcdTileCount:log10(CalEnergyRaw)

20GeV run in Blue
280GeV run in Black

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Same, but for ACD Total Energy instead of Tile Count.

What's going on? Note the ACD tiles are mainly on the side of the TKR in the beam test, thus hits come also from particles scattering out the sides of the TKR.

For the same value of CalEnergyRaw, the 20GeV beam events have a higher fraction of the primary energy visible, thereby tending to select events that shower in the TKR earlier.

Things to do:

➢ Looking forward to getting the beam test tuple! individual tile information important.
➢ Could be useful to send the beam into the unmatched calorimeter:

TkrThickHits:log10(CalEnergyRaw) 20GeV Run