Multiple Hit Strips in Tracker

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Beam Test Analysis Meeting

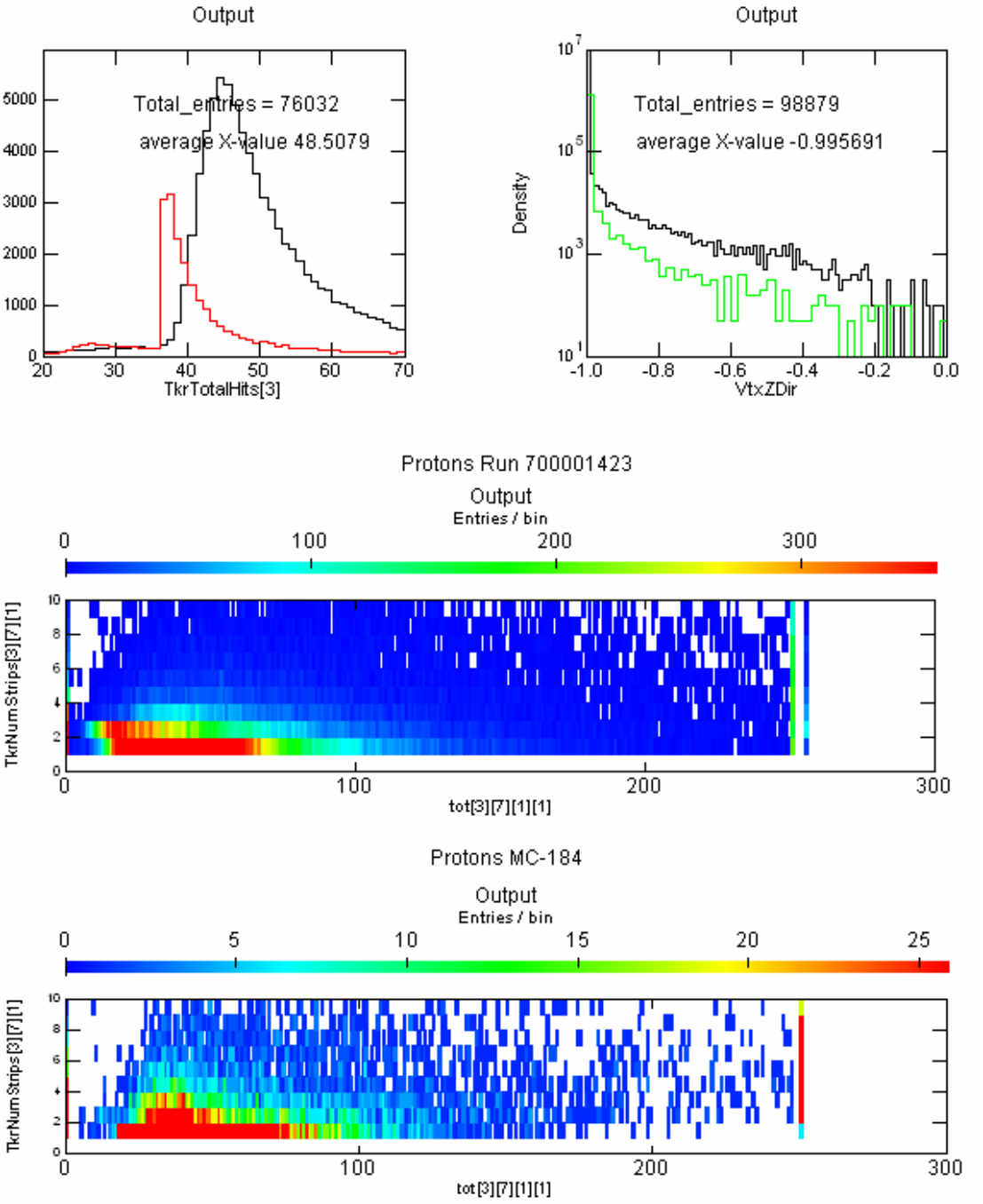
1) In last week's meeting, Johan showed real protons peak at ~45 hit strips while MC protons peak at ~36 hit strips.

2) Show the TOT for these events.

3) Repeat for cosmic muons.

Protons 6 Gev/c 0° CERN PS

Red and Green=MC

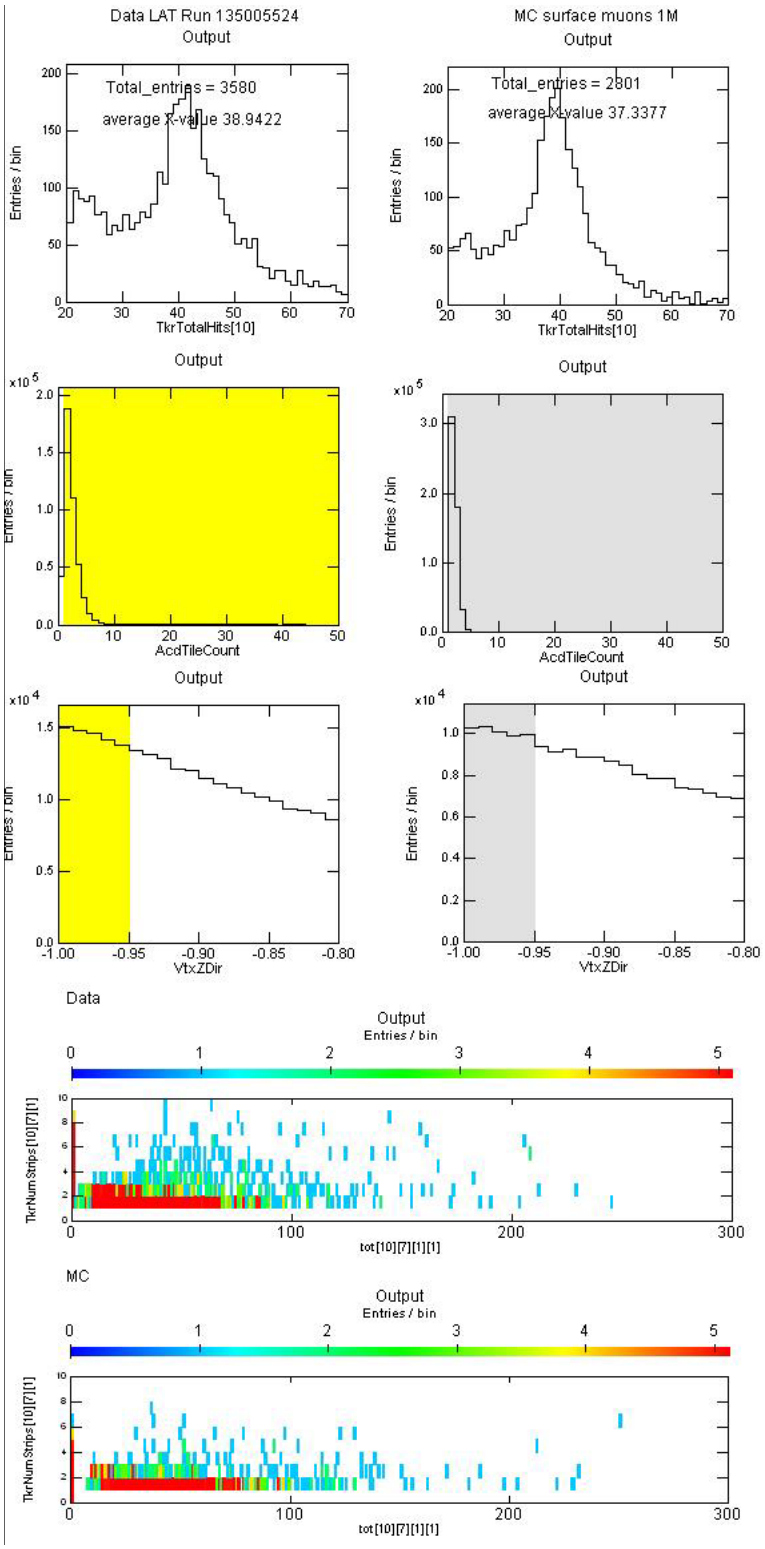


1) Real protons (peak= 45 hits) have ~8 more hits than MC protons (peak= 37 hits).

2) The events with 2 strips/layer have smaller layer TOTs than 1 strip events. Therefore, 2 strip events are not caused by capacitive coupling, but by real charge sharing between the strips (eg: diffusion, delta rays ?).

3) The MC doesn't get the charge sharing right.

Cosmics (Muons) LAT16 Vertical



1) Real muons (peak= 41 hits) have ~2 more hits than MC muons (peak= 39 hits).

2) The MC seems to get the charge sharing correct.

Conclusions

1) Must check that the strip discriminator thresholds were the same for all these data sets. If they were the same then:

2) The real protons and muons are different in the amount of charge they share with adjacent strips !

3) The MC for protons doesn't share enough charge.