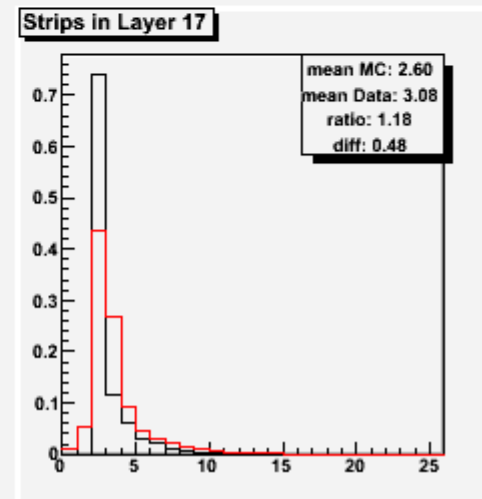
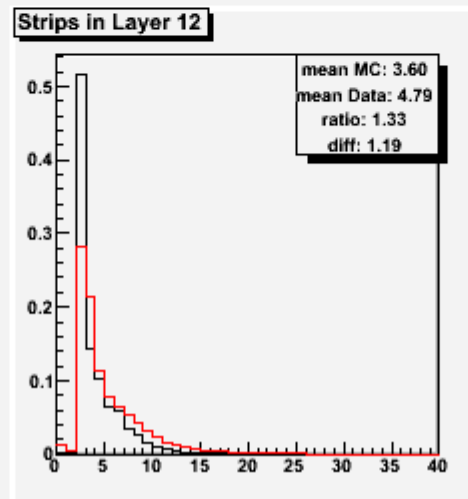
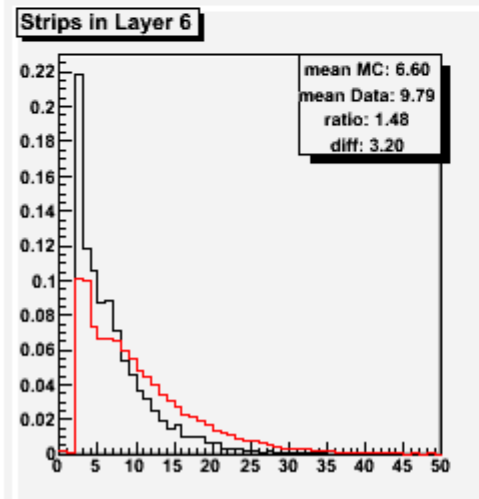
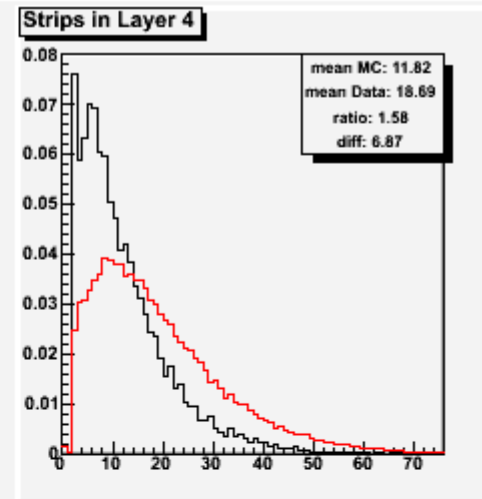
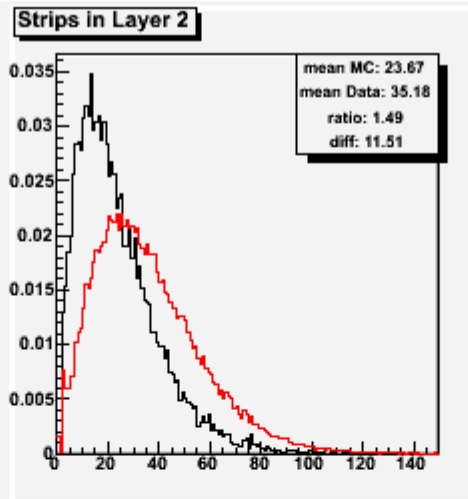
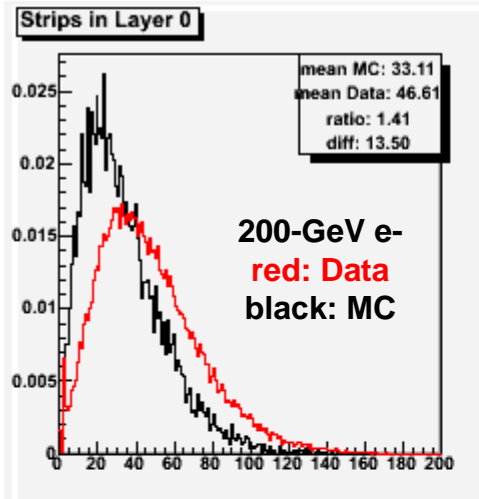


TKR Hit Multiplicities for High-Energy Electrons

L. Rochester
Beamtest VRVS Meeting
27 September 2006

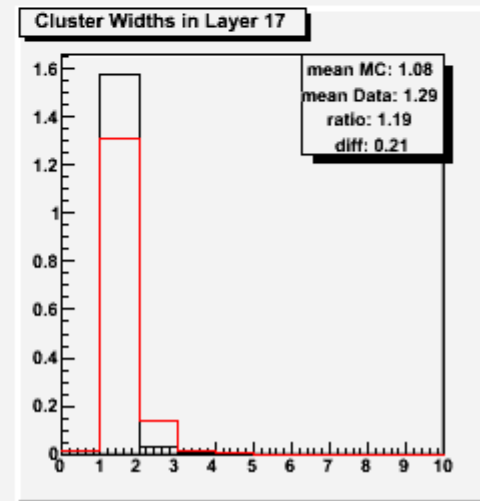
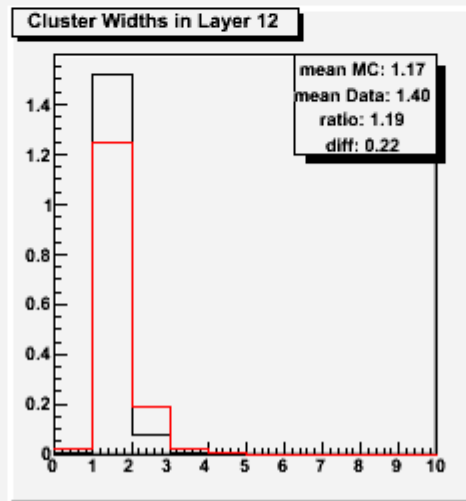
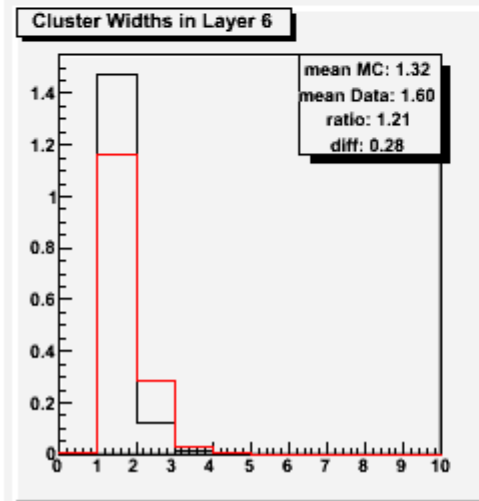
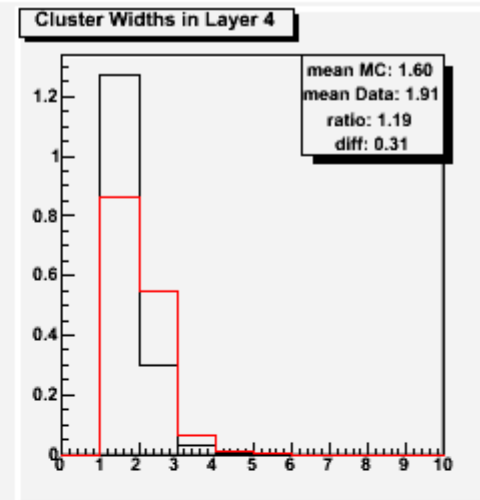
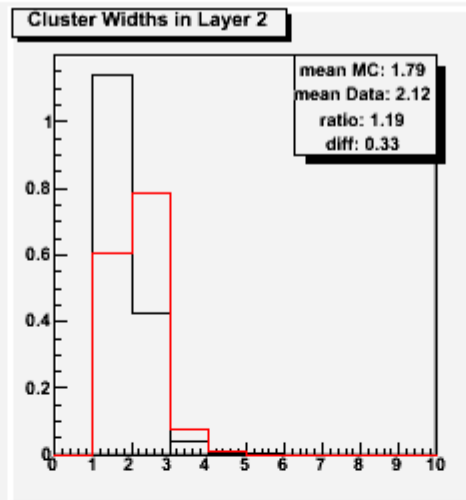
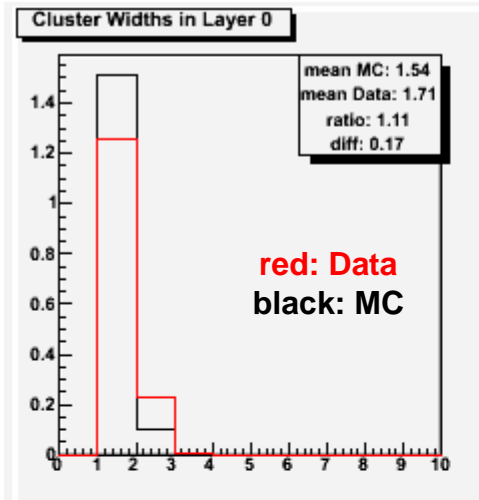
Strip Multiplicities



Are the clusters wider in the data?

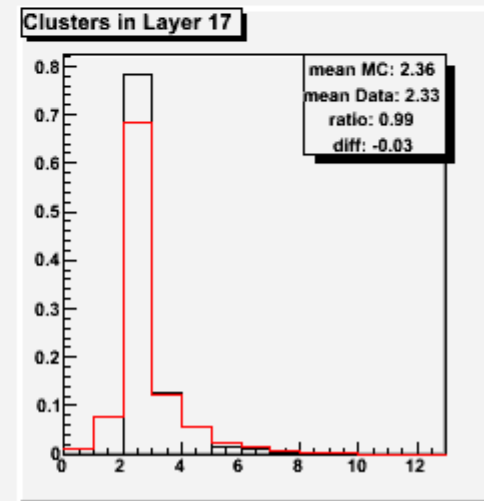
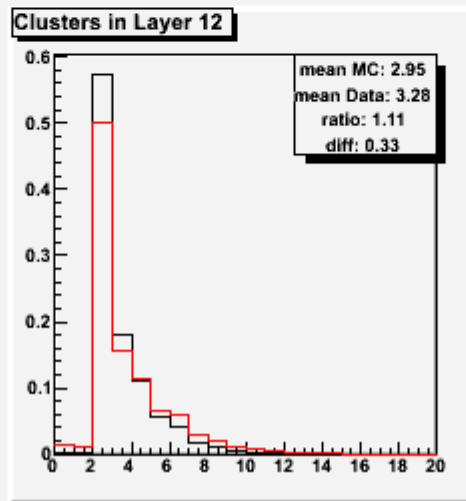
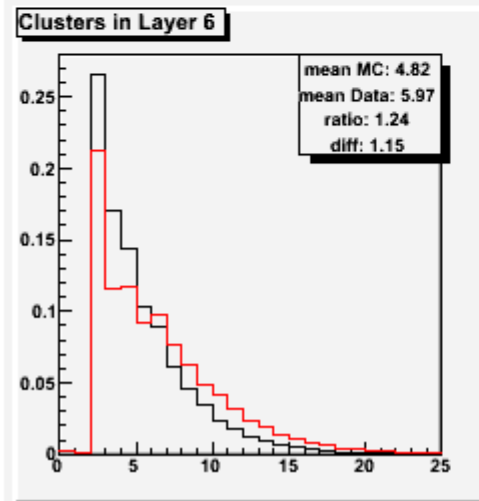
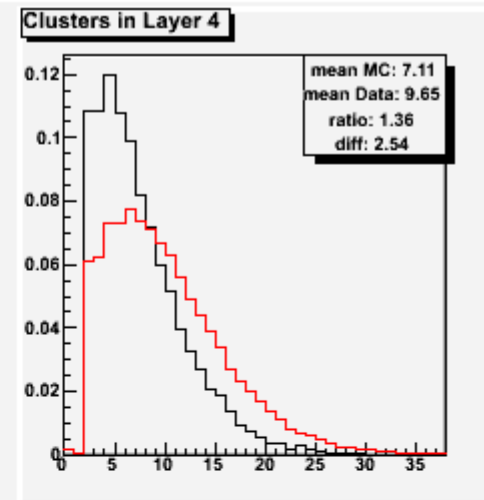
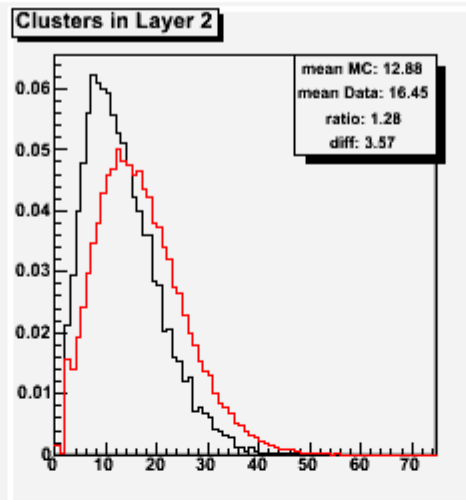
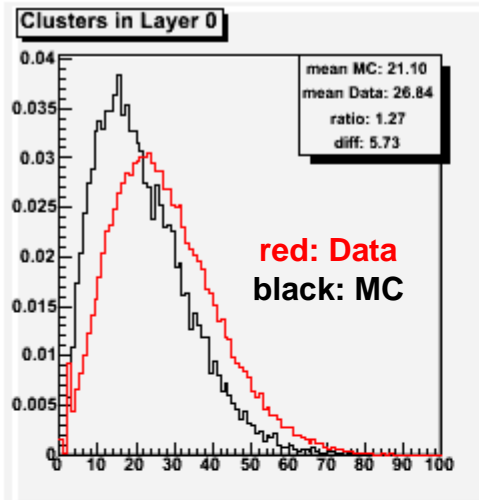
Cluster Widths

*“Width” is
#strips/#clusters*



Yes, but that's only part of it...

Cluster Multiplicities



There are more clusters in the data.

Some Observations

- Ratio of cluster widths is 1.2, ~independent of layer
 - range cutoff in the tracker
 - diffusion near strip edge
 - ToT thresholds
 - crosstalk
- Ratio of # clusters depends on layer, close to 1.0 at top
 - tends to absolve modeling of beam
 - range cutoff in calorimeter (affects backsplash)
 - incorrect physics of low-energy shower particles, delta rays
 - material audit
 - but converter goes in the other direction, if at all
 - non-converter accounts for ~20% of the radiation length — hard to see how we could be that far off!
 - hadronic physics?

We need to study all these effects!