

# July 8<sup>th</sup> Weekly Update

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Nevis Labs



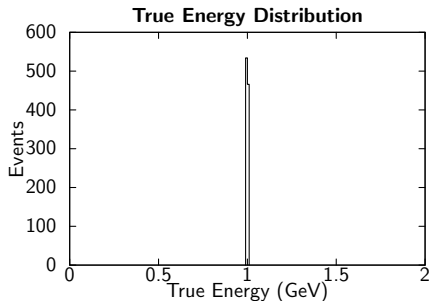
July 12, 2013

- ① Cluster Reconstruction Studies Continued
- ② Next Week

# Single Electron Parameters (ubfcl prodsingle)

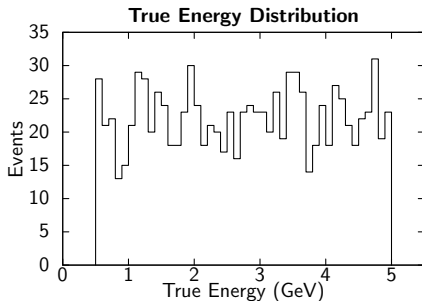
## Monoenergetic

- 1000 events
- 1 GeV
- Reconstruction with FFThit and FuzzyCluster



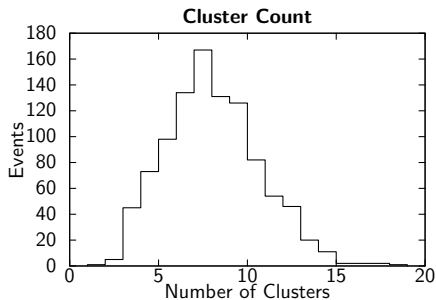
## Uniform

- 1000 events
- 0.5 - 5 GeV
- Reconstruction with FFThit and FuzzyCluster

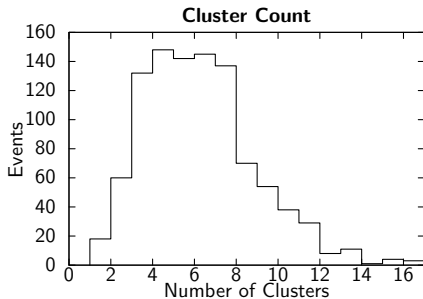


# Cluster Count

## Monoenergetic



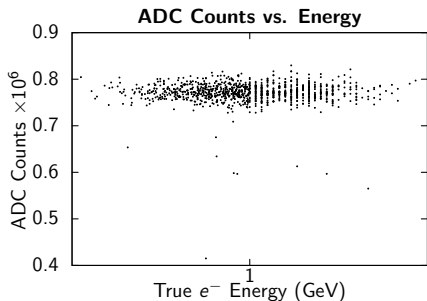
## Uniform



Average total clusters per event  $\sim 6/7$

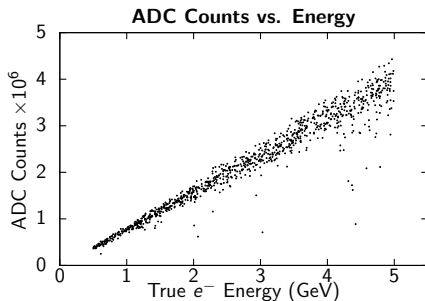
# Single Electron Parameters (ubfcl prodsingle)

## Monoenergetic



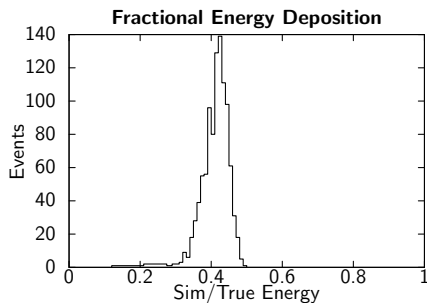
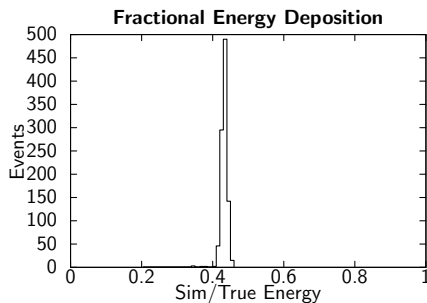
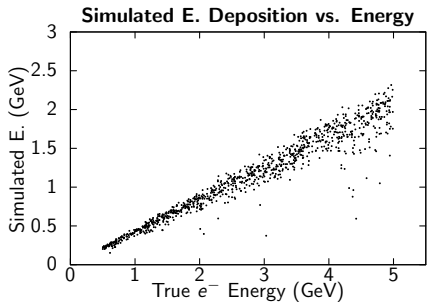
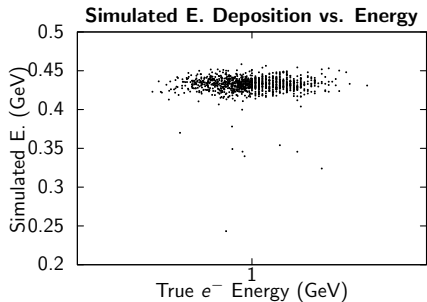
Center to edge = 0.5 MeV.  
Same ADC spread despite small true energy variation.

## Uniform



ADC scales linearly with true energy.  
Larger spread at higher energy.

# Simulated E. Deposition on Wires vs. True E



# Next Week

## Cheater Calorimetry (Some this week)

- Map hits to true ionization XYZ
- Calculate “cheater” energy reconstruction (calorimetry) for electron showers by correcting energy deposition on wires with Birks recombination
- Much harder than I anticipated

## Hardware

- Testing shaper and FEM response
- Plots of ADC vs.  $V_{in}$

## PMT GUI

- Develop GUI for online PMT monitoring
- Currently learning ROOT GUI objects