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Study of *Bcal* Segmentation with *Bcal* Reconstruction Code

Part 2: Angular Resolution

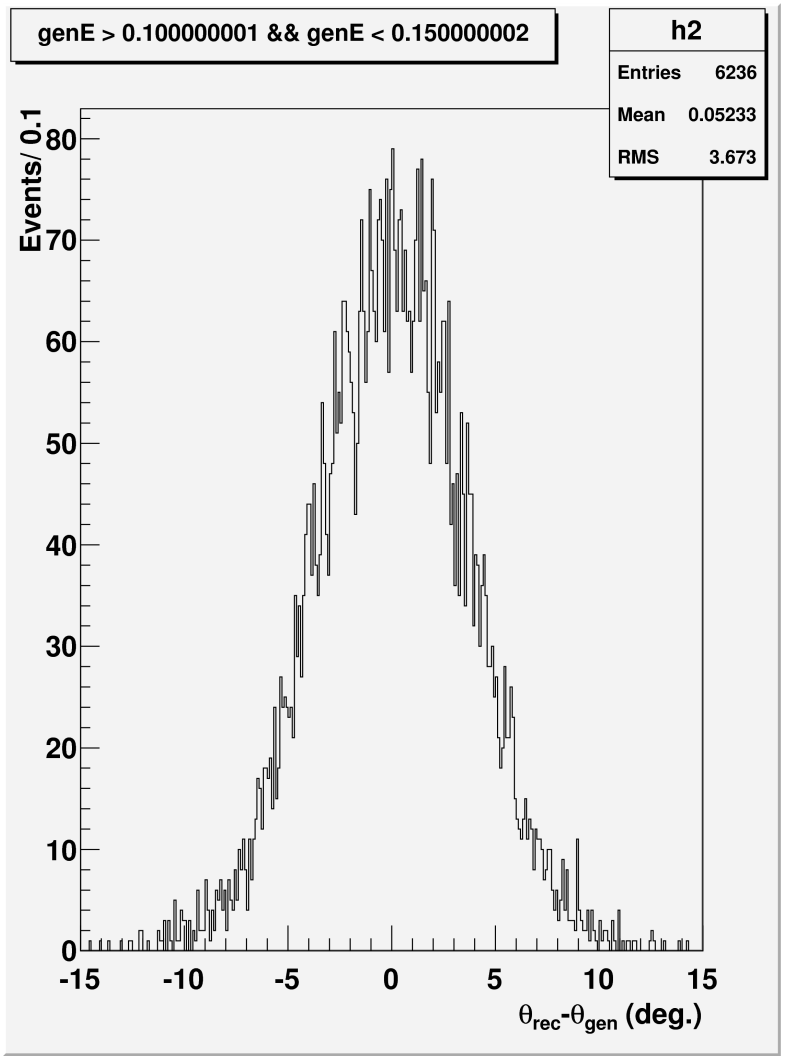
I. *Semenova, A. Semenov, Z. Papandreou, G. Lolos (UofR)*

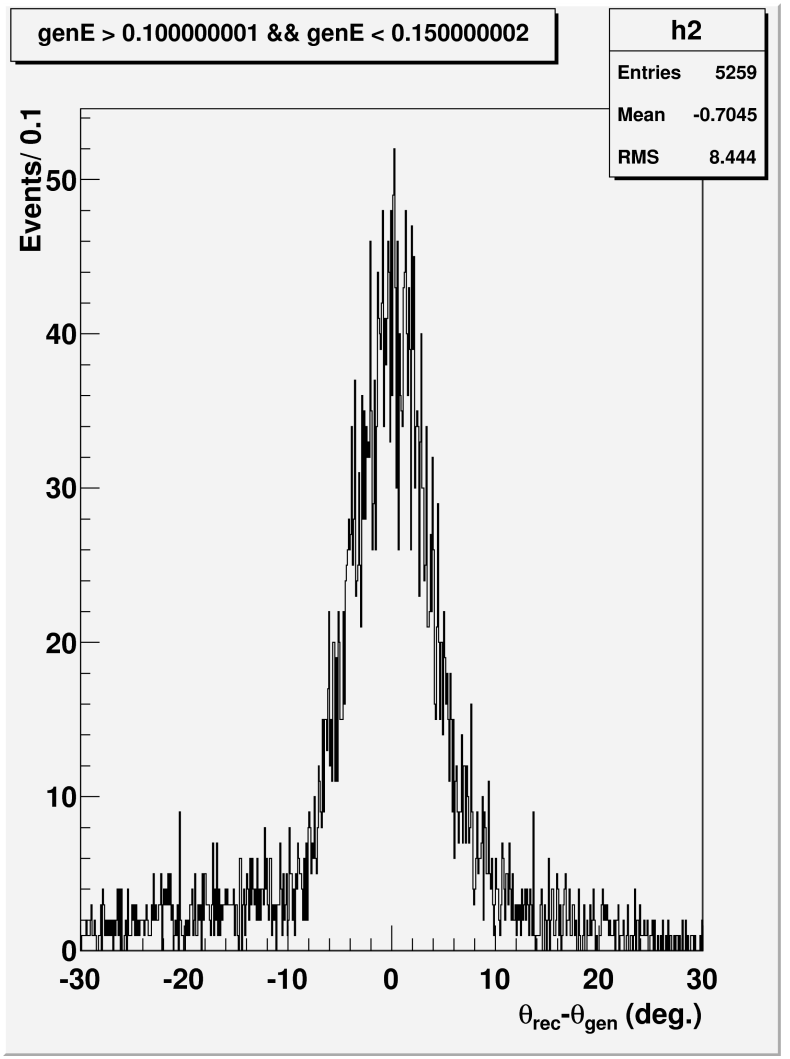
- **Code: "sim-recon-2011-02-02 tag version (bug fixed by Matt)**

- **In our simulation, we used statistics of 5000 photons per 1-cm bin of Z) and improved fits of the spectra**

Polar-Angle Spectra:

Fine-Segmented *vs* Summed-in-Towers

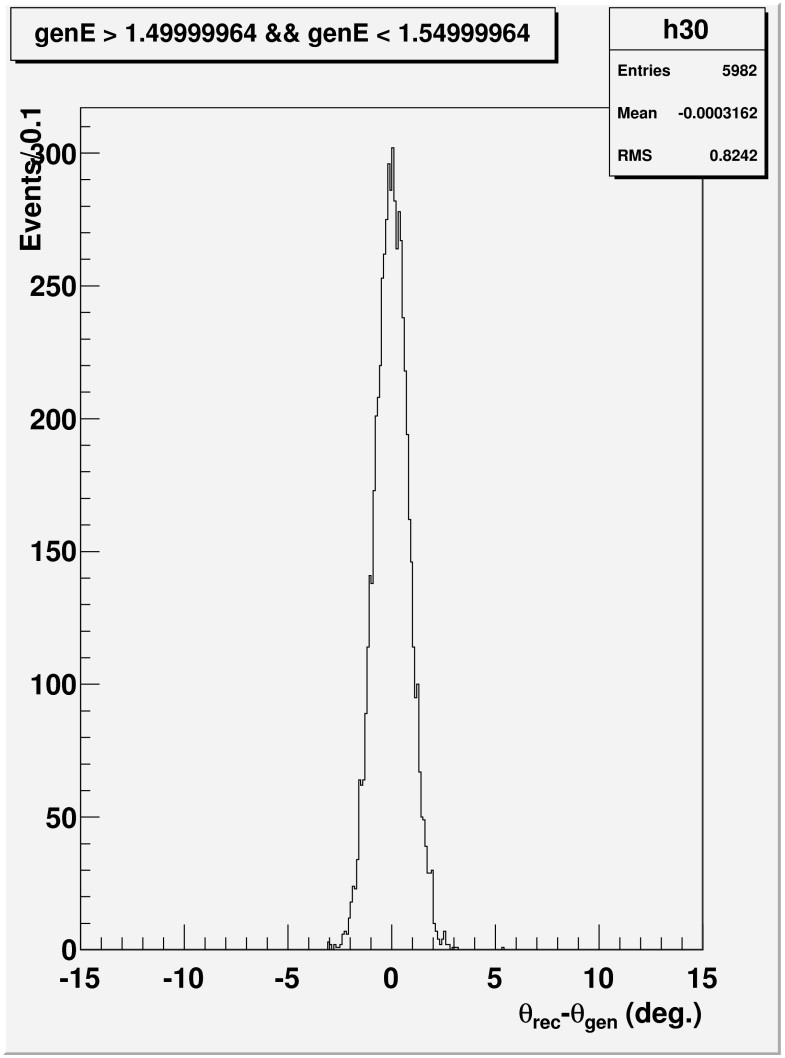


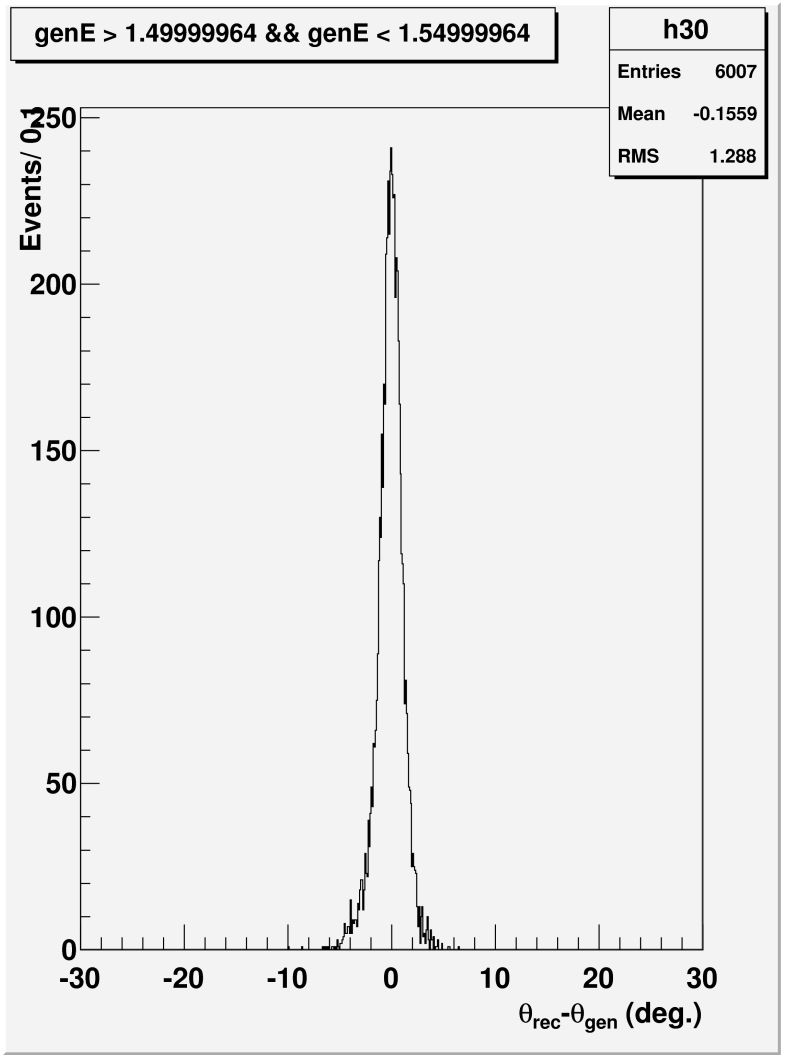



```
# maximum hit occupancy
BCAL_MAXOCCUPANCY_FRACT   0.05
```

Polar-Angle Spectra:

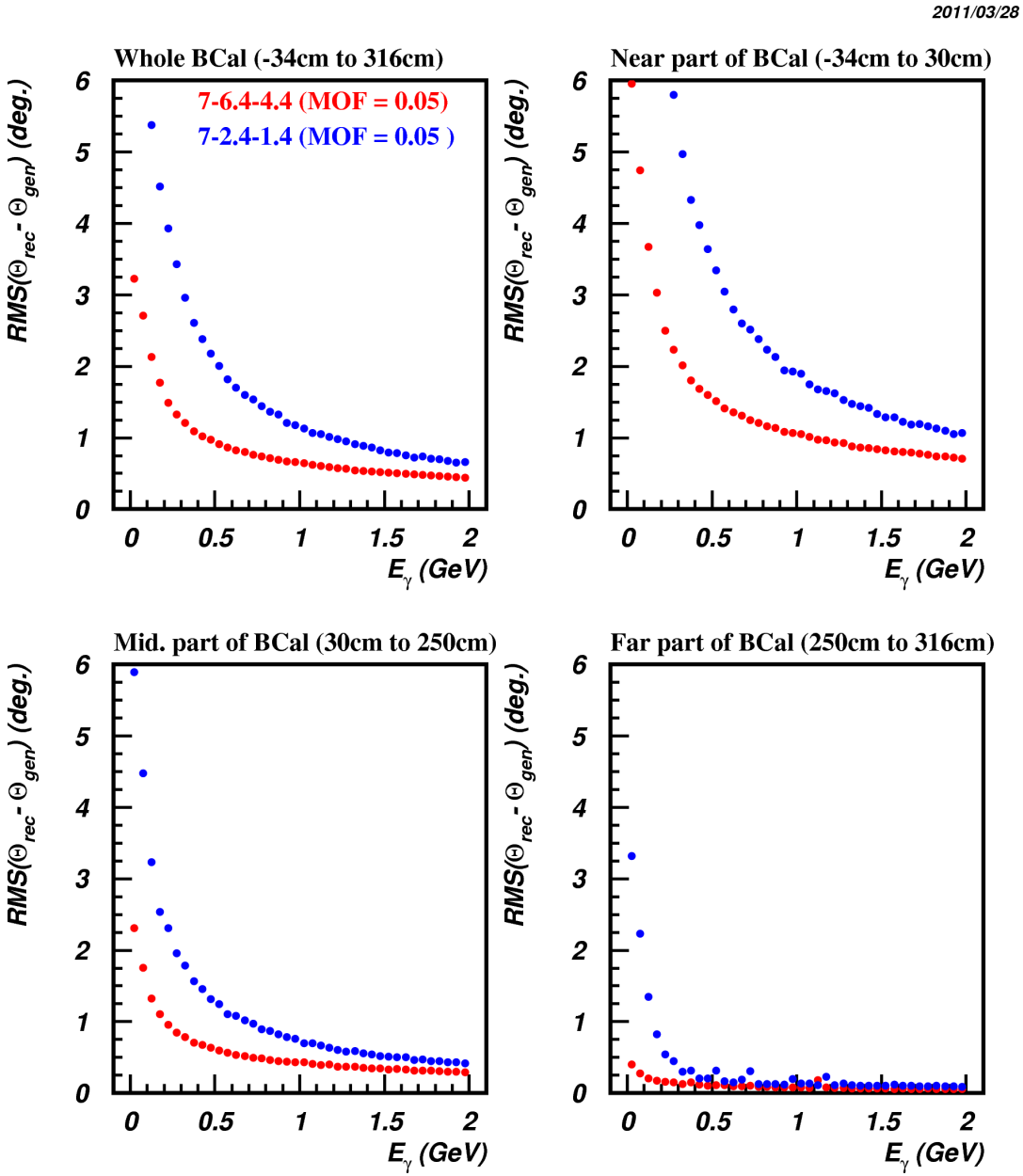
Fine-Segmented *vs* Summed-in-Towers






```
# maximum hit occupancy
BCAL_MAXOCCUPANCY_FRACT   0.05
```

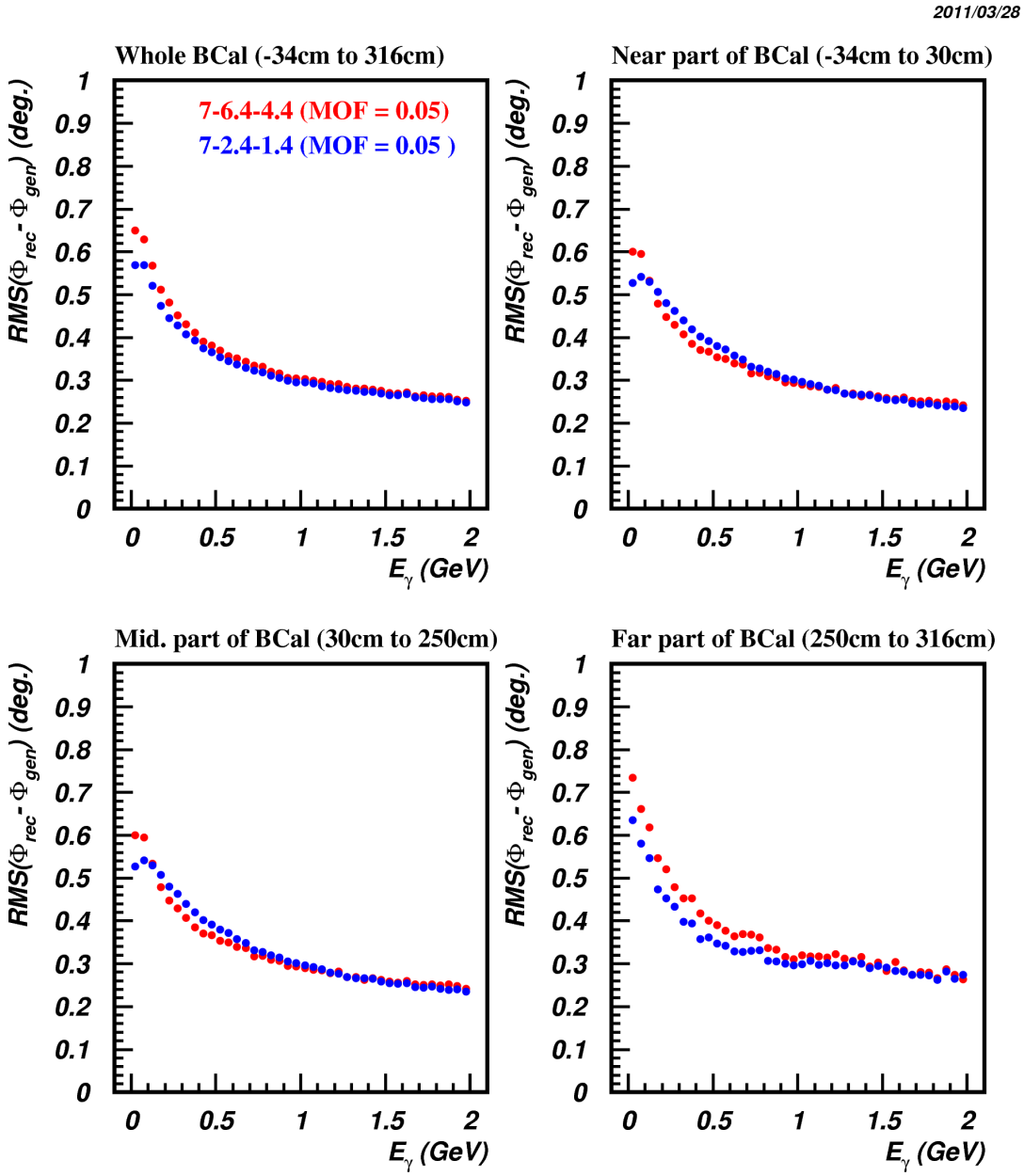
Polar Angle: Fine-Segmented *vs* Summed-in-Towers



Polar-angle resolution is about 2 times worse for "Summed-in-Towers" readout

```
# maximum hit occupancy
BCAL_MAXOCCUPANCY_FRACT   0.05
```

Azimuth Angle: Fine-Segmented *vs* Summed-in-Towers



Looks almost the same...

```
# maximum hit occupancy
BCAL_MAXOCCUPANCY_FRACT   0.05
```

Conclusion:

- "Summed-cells" readout significantly (viz., about 2 times) worsen Bcal polar angle resolution

- Azimuth angle resolution is not affected much by summing of cells

- More study is expected