SLICPandora Jet Energy Resolution

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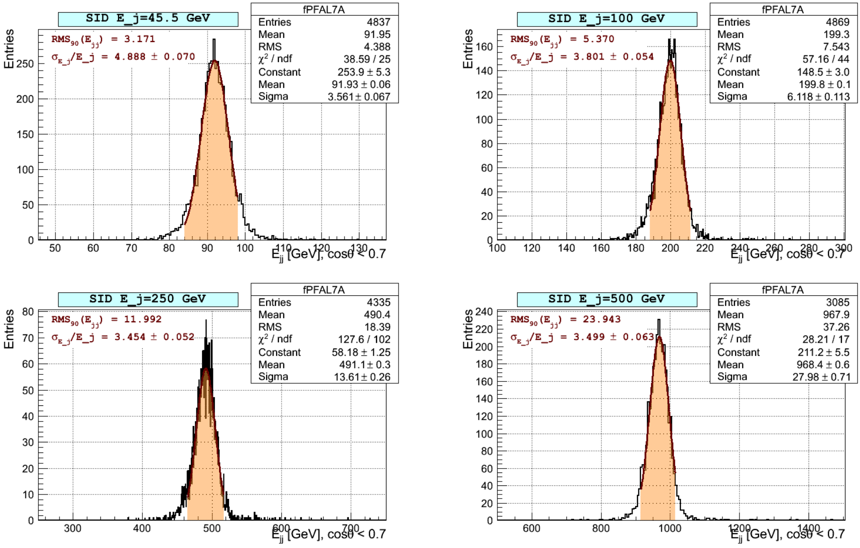
Z → uds in the barrel



Definition

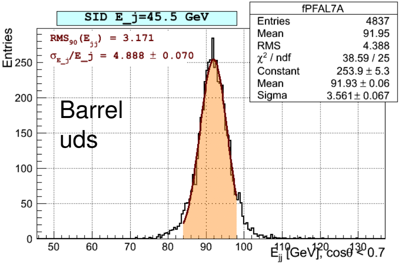
From data calculate $\mathrm{rms}_{90}(E_{jj})$ and $\mathrm{mean}_{90}(E_{jj})$

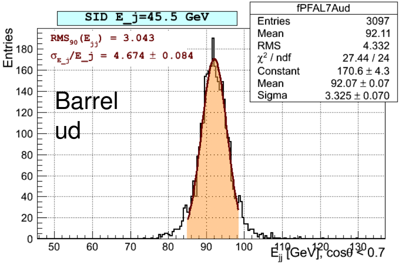
$$\frac{\sigma(E_j)}{E_j} = \frac{\mathrm{rms}_{90}(E_{jj})}{\mathrm{mean}_{90}(E_{jj})}\sqrt{2}$$

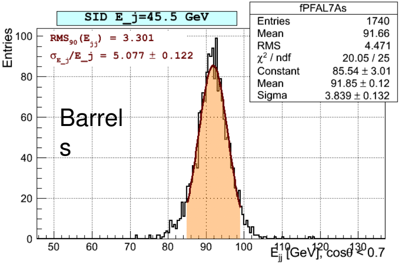
$$\Delta\frac{\sigma(E_j)}{E_j} = \frac{\frac{\sigma(E_j)}{E_j}}{\sqrt{N}}$$

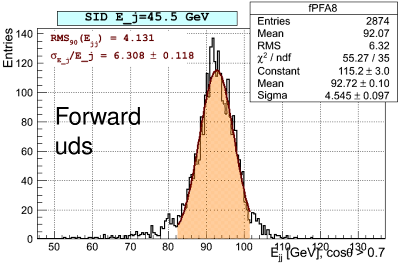
This is based on a script from M. Thomson.

Separate Contributions in Z → uds

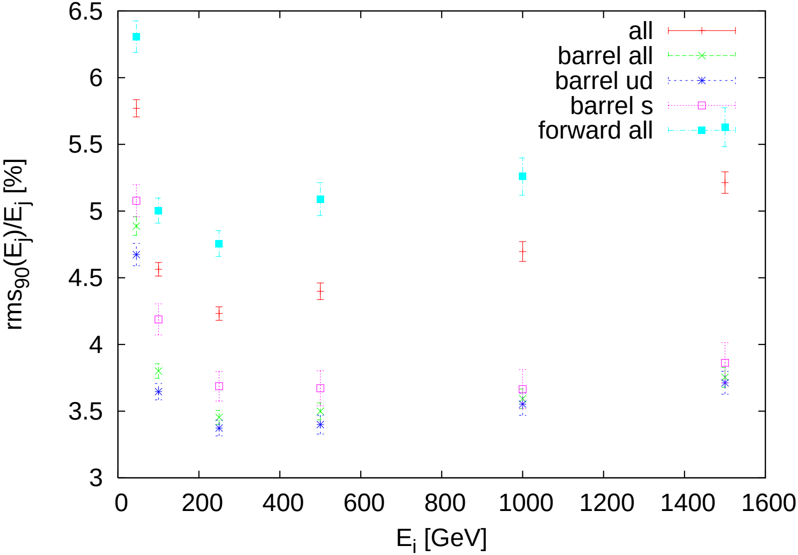








Energy Resolution (M. Thomson's definition)



Results

E_j [GeV]	energy resolution $rms_{90}(E_j)/mean_{90}(E_j)$				
	all	barrel	barrel ud	barrel s	forward
45.5	5.8±0.1	4.9±0.1	4.7±0.1	5.1±0.1	6.3 ± 0.1
100	4.6±0.1	3.8±0.1	3.7±0.1	4.2±0.1	5.0 ± 0.1
250	4.2±0.1	3.5±0.1	3.4±0.1	3.7±0.1	4.8 ± 0.1
500	4.4±0.1	3.4±0.1	3.4±0.1	3.7±0.1	5.1 ± 0.1
1000	4.7±0.1	3.6±0.1	3.6±0.1	3.7±0.2	5.3 ± 0.1
1500	5.2±0.1	3.8±0.1	3.7±0.1	3.9±0.2	5.6 ± 0.1