

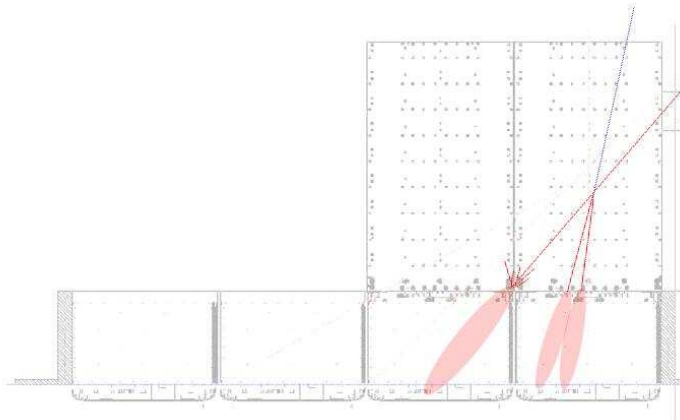
GLAST CERN 2006 Beamtest



Update on Hadronic Cascades

Johan Bregeon (INFN-Pisa)

Beamtest Analysis - May 23rd, 2007

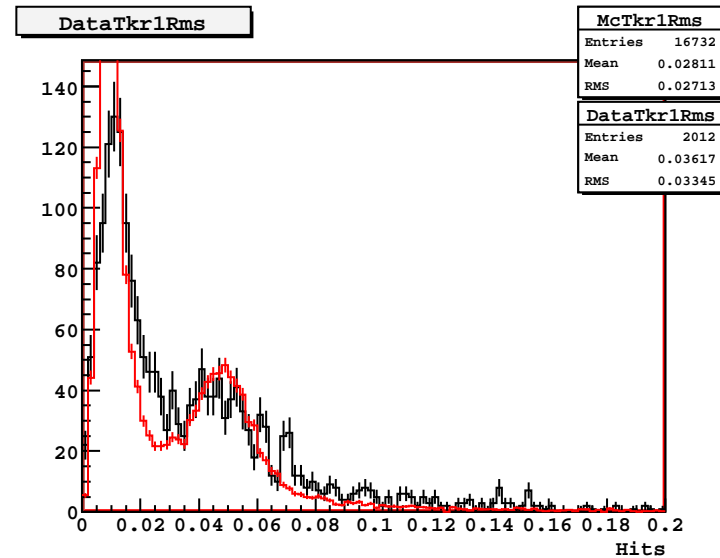
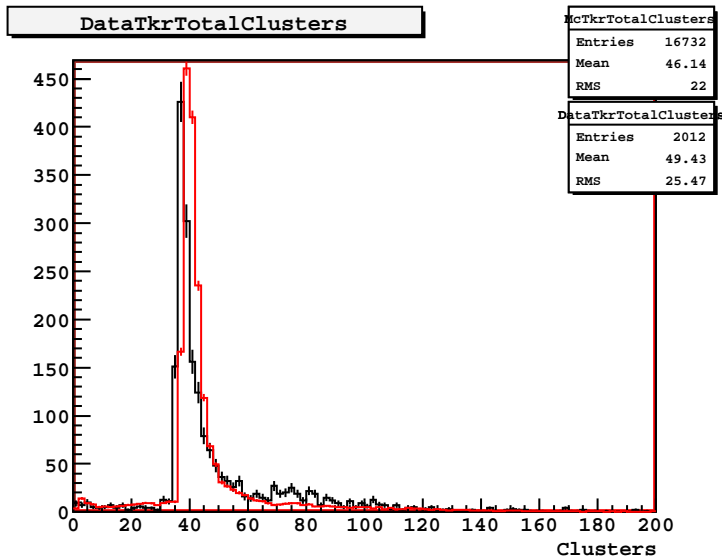
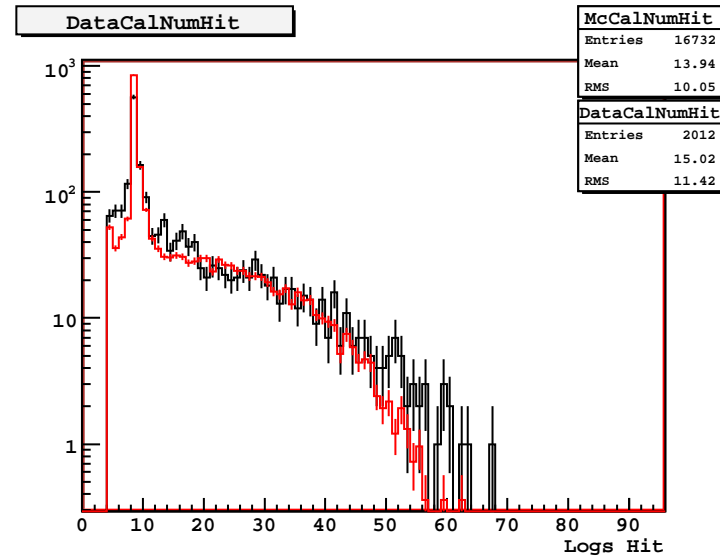
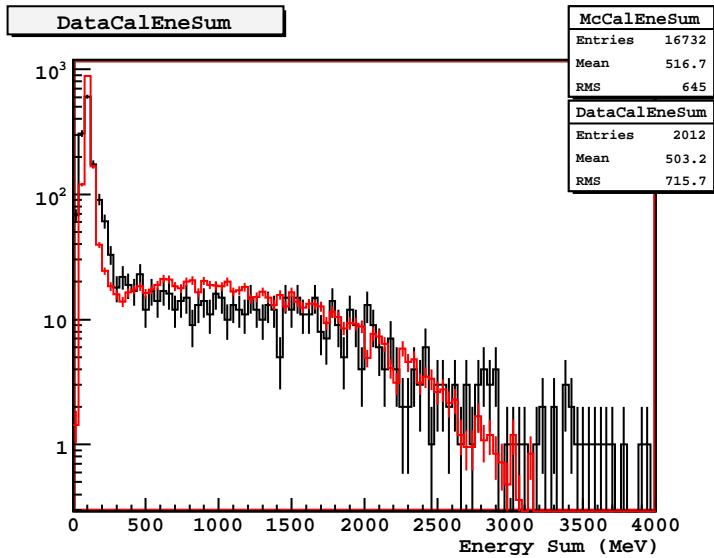


Analysis shown here

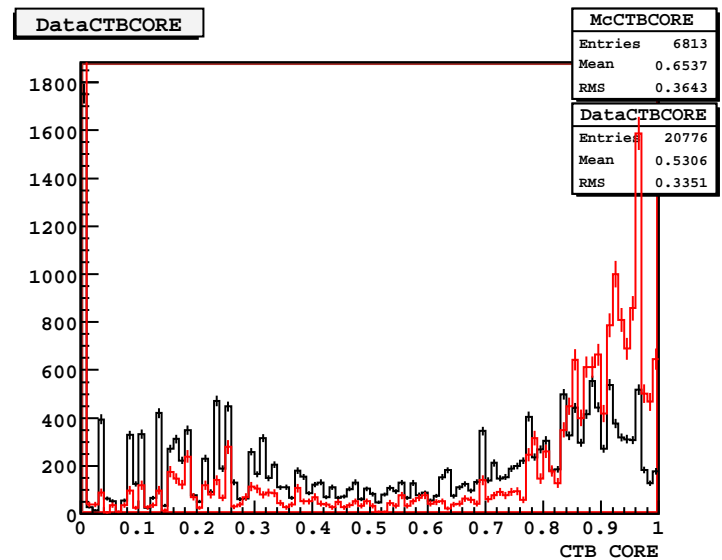
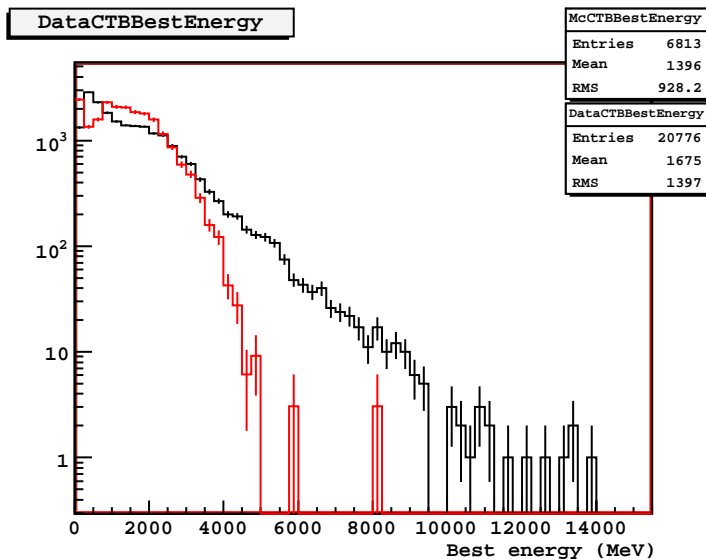
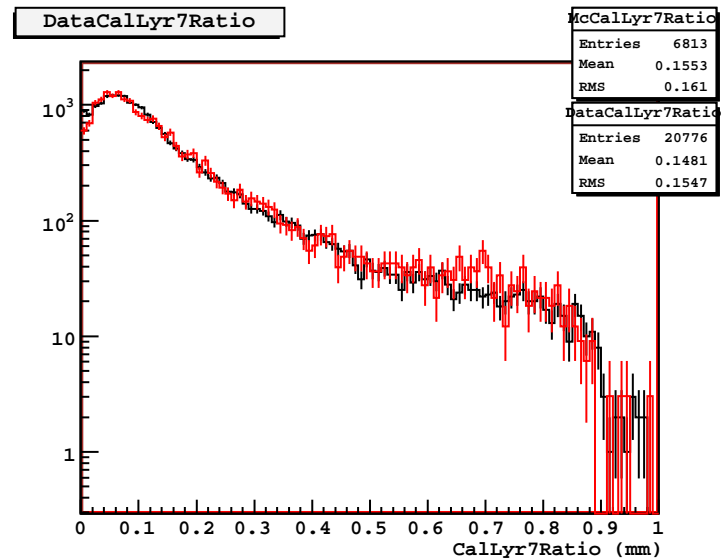
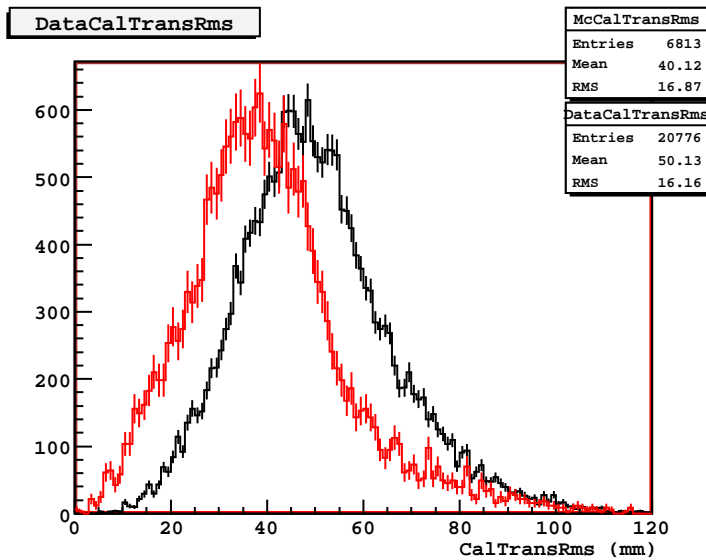
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Protons	PS	6GeV	0degree	[1423]	[GLAST]
Protons	PS	10GeV	0degree	[1419]	[GLAST]
Protons	SPS	20GeV	0degree	[2237]	[GLAST, QGSP_BERT]
Protons	SPS	100GeV	0degree	[2363]	[GLAST, QGSP_BERT]
Protons	SPS	150GeV	0degree	[1755]	[GLAST, QGSP_BERT]

- GLAST is LHEP_BERT
- From 20GeV, I have also tried QGSP_BIC : similar results to QGSP_BERT
- From 20GeV, I have also tried LHEP : similar results to GLAST
- Data in black and MC in red
- Svac Cuts : $\Delta_T > 500\mu s$ and $CalLogHit \geq 8$ and $E \geq 200MeV$
- Merit (CalTransRms) : $E > 200MeV$

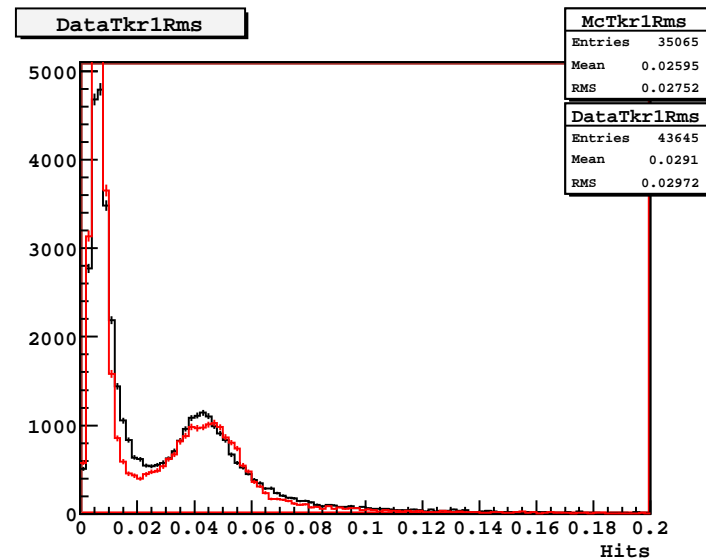
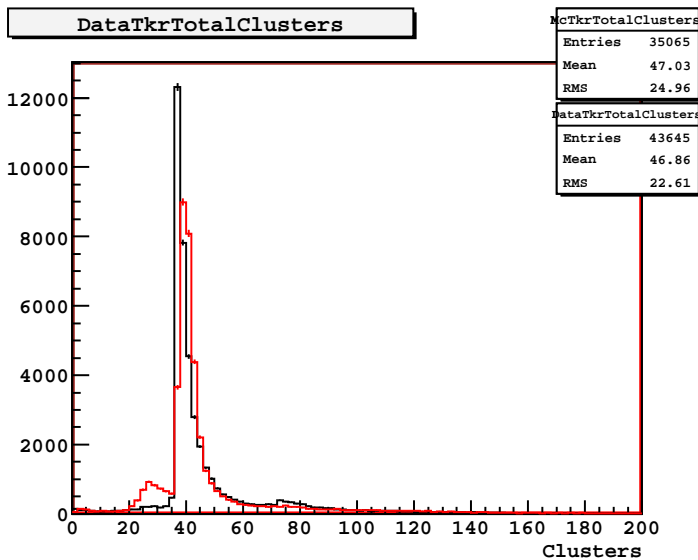
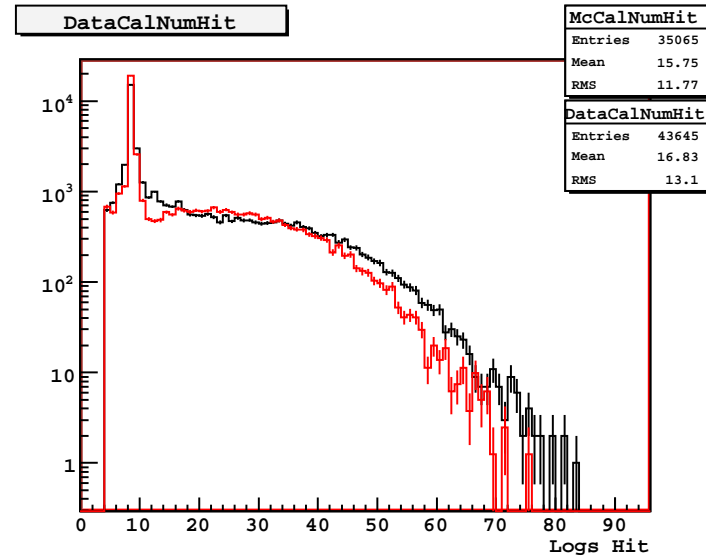
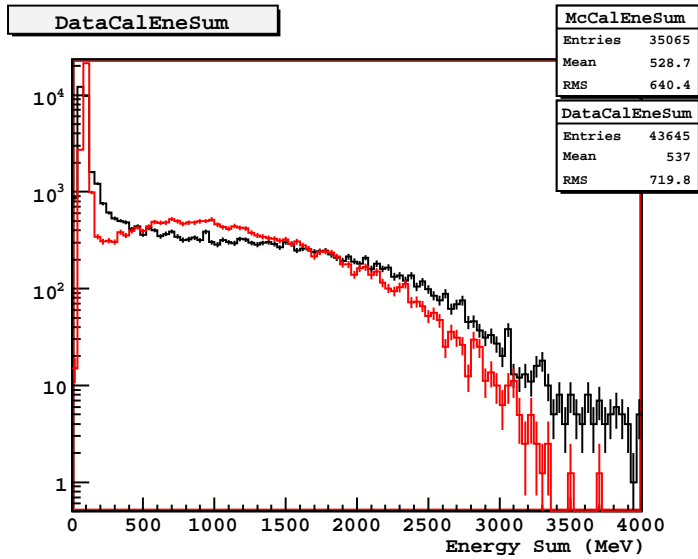
Pions 5GeV : 0823/GLAST



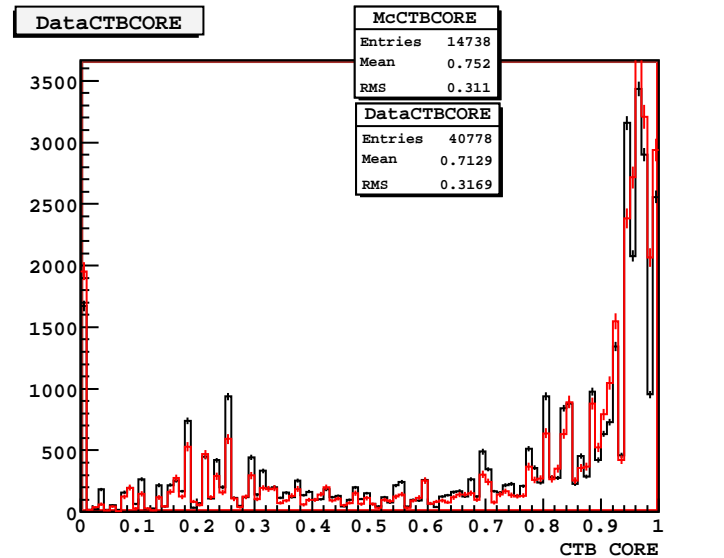
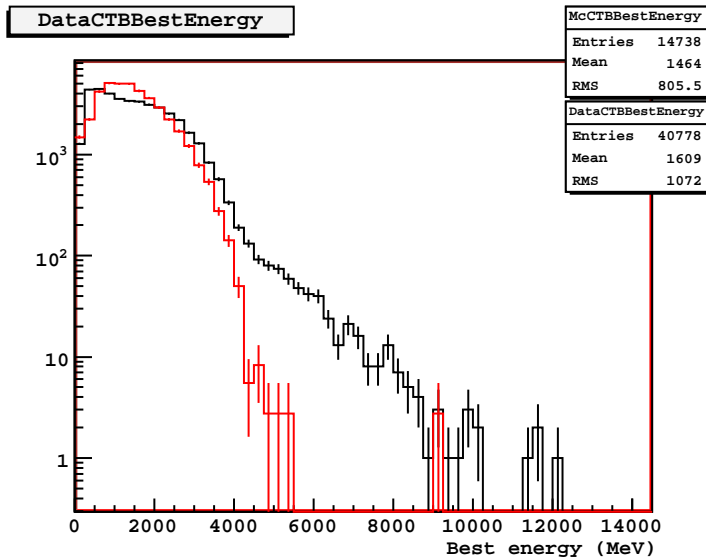
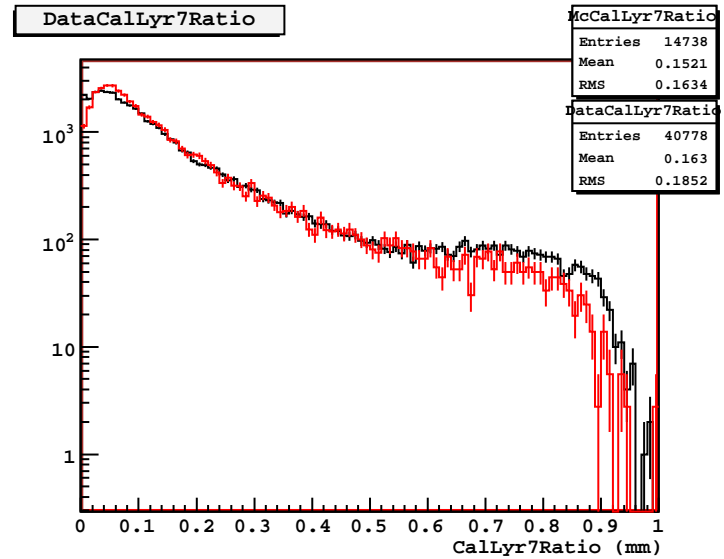
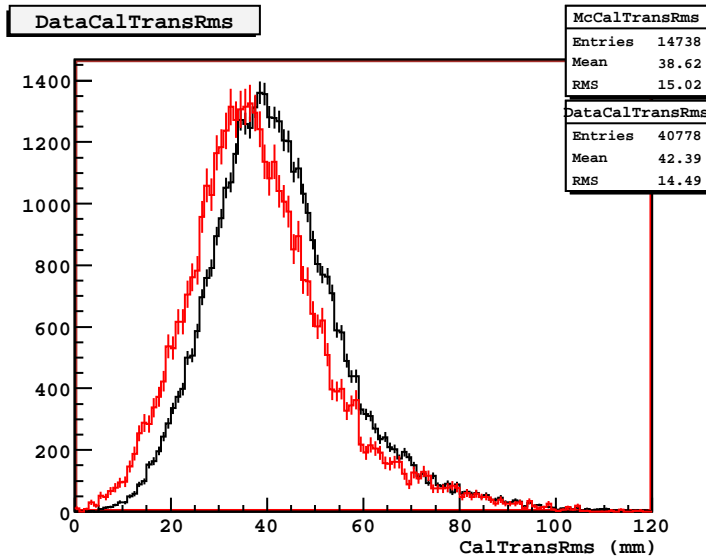
Pions 5GeV : 0823/GLAST



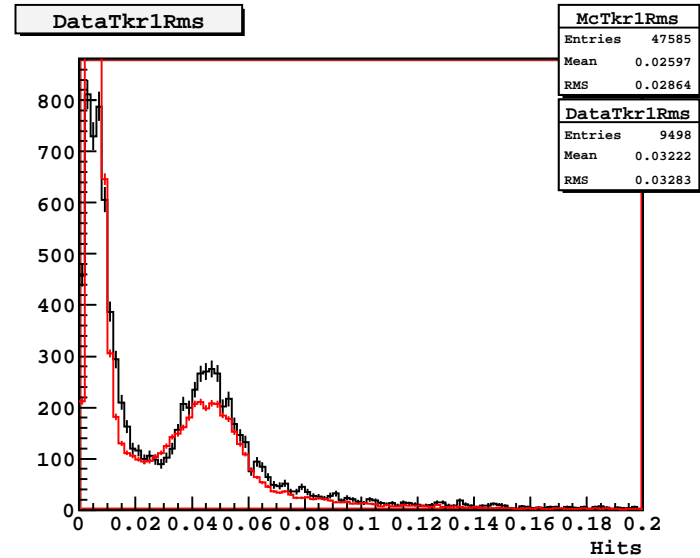
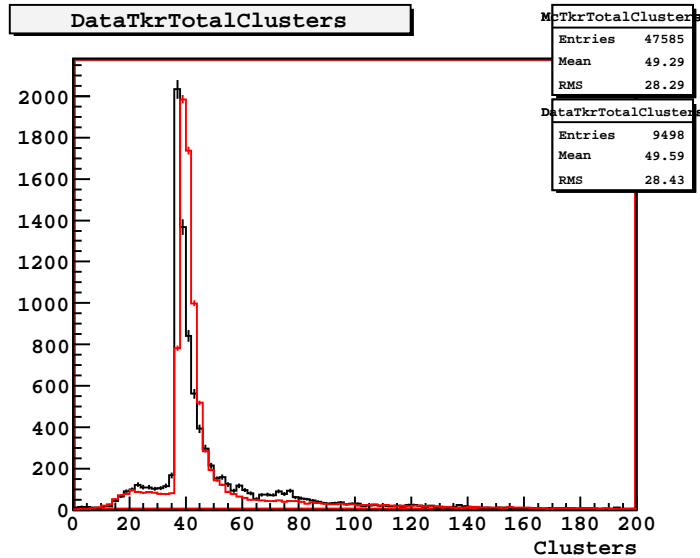
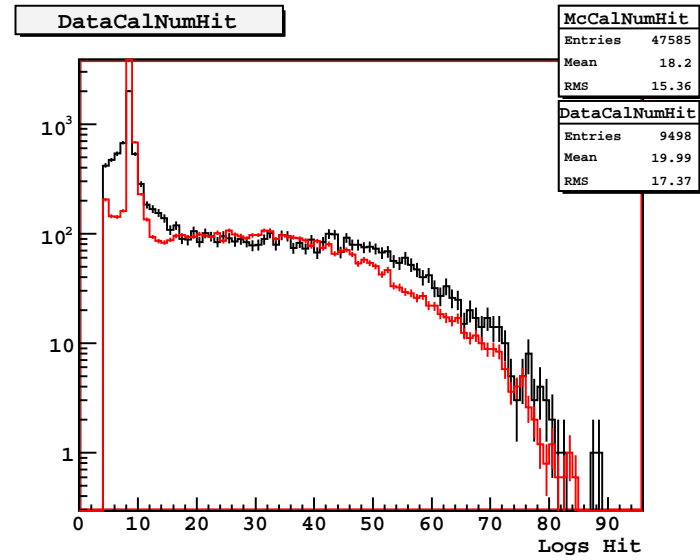
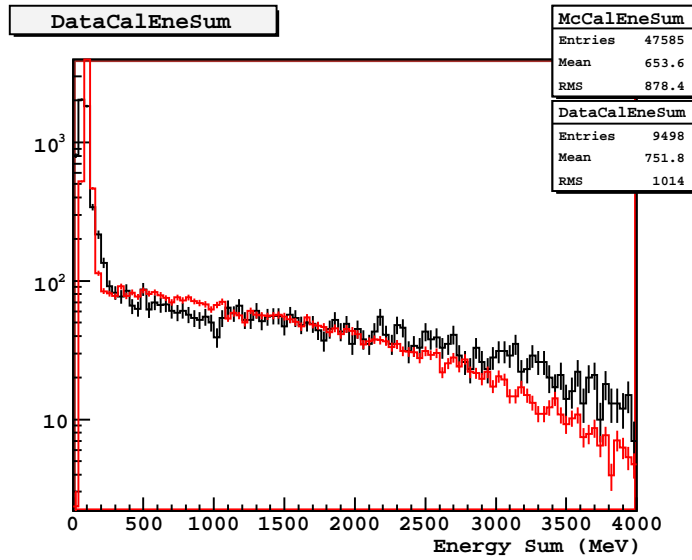
Protons 6GeV: 1423/GLAST



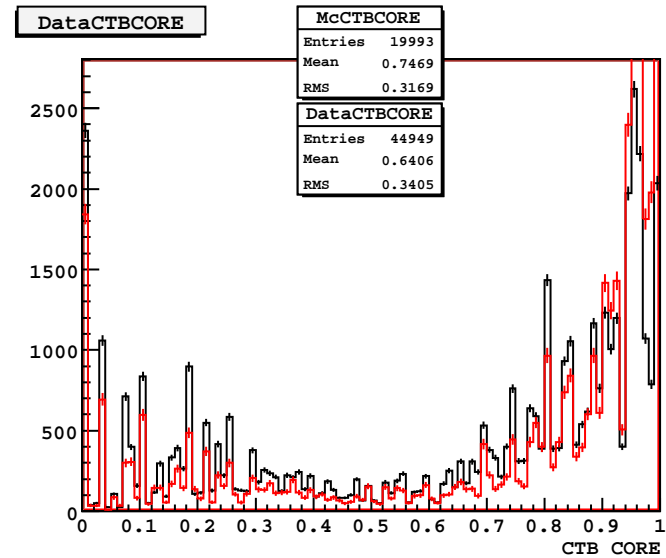
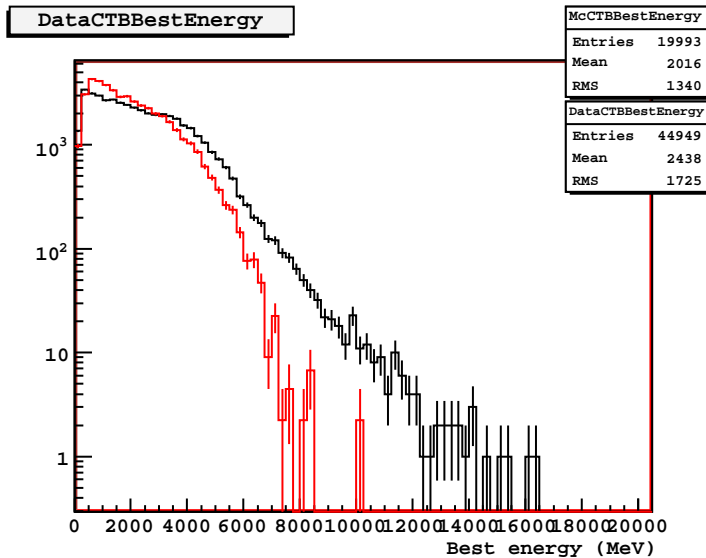
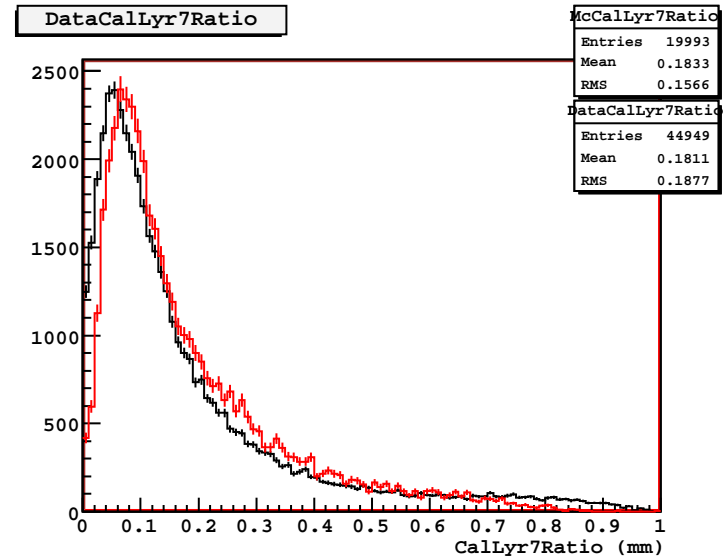
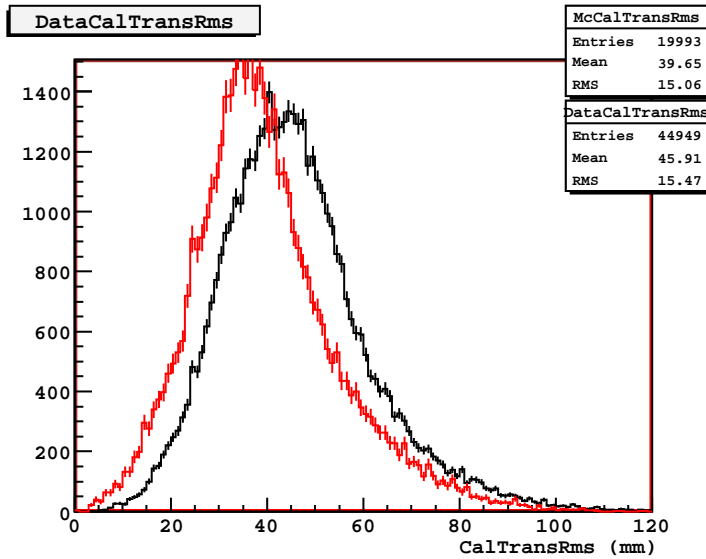
Protons 6GeV: 1423/GLAST



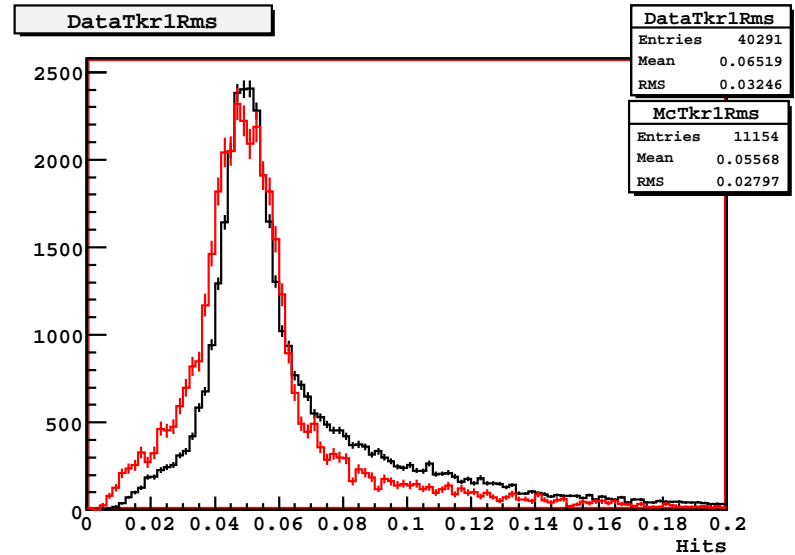
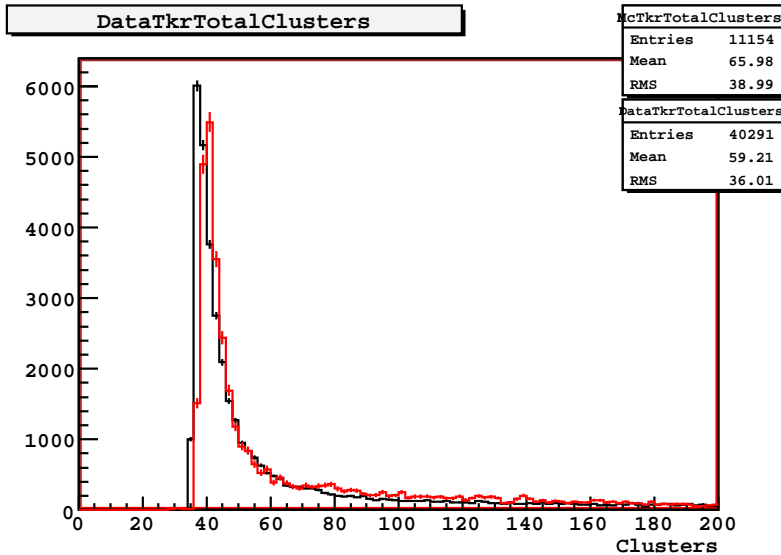
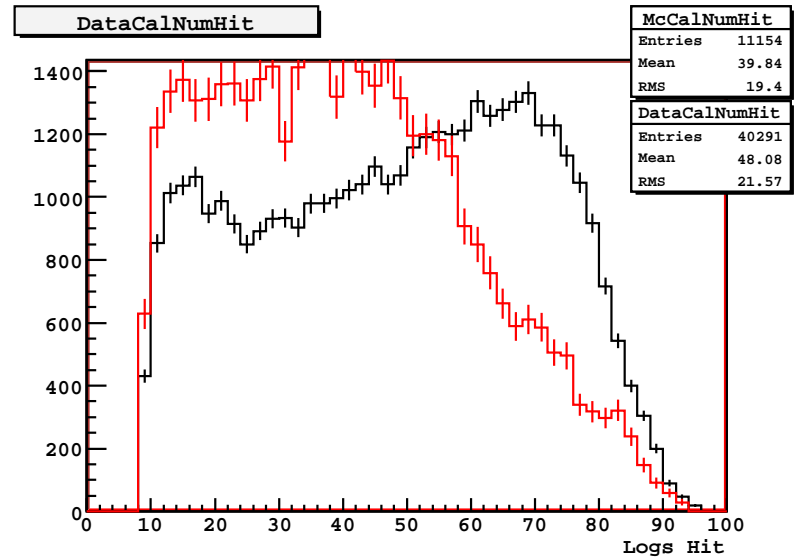
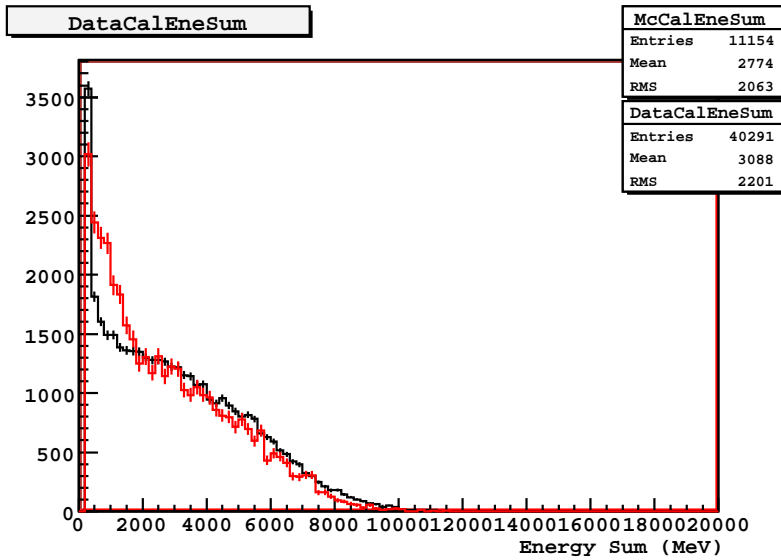
Protons 10GeV: 1419/GLAST



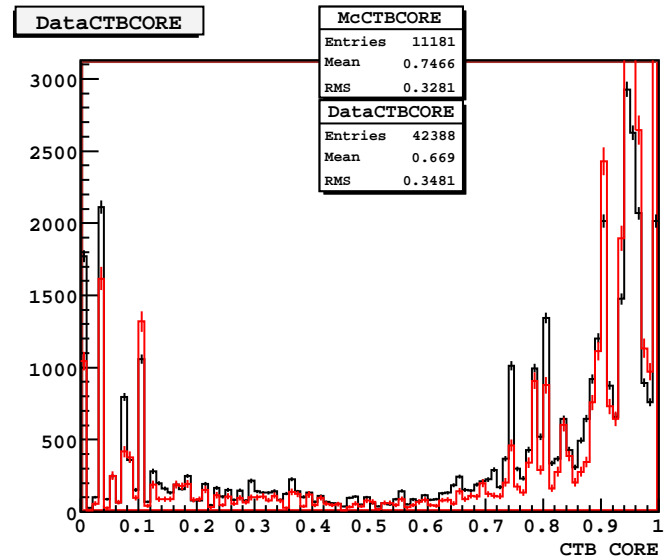
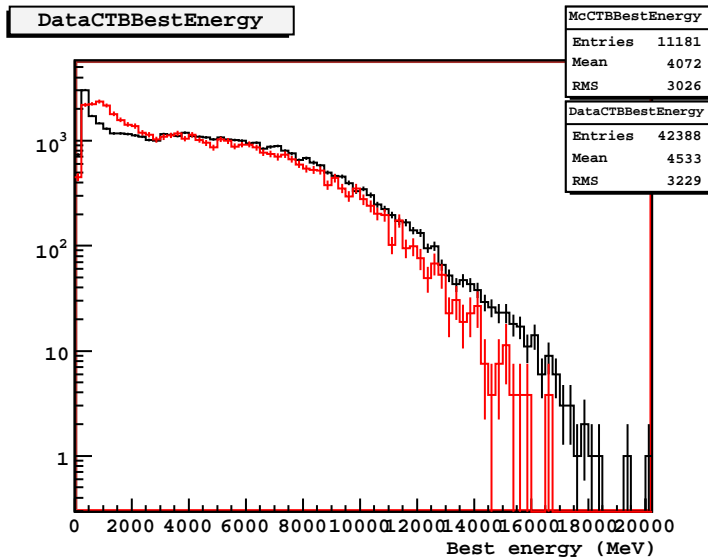
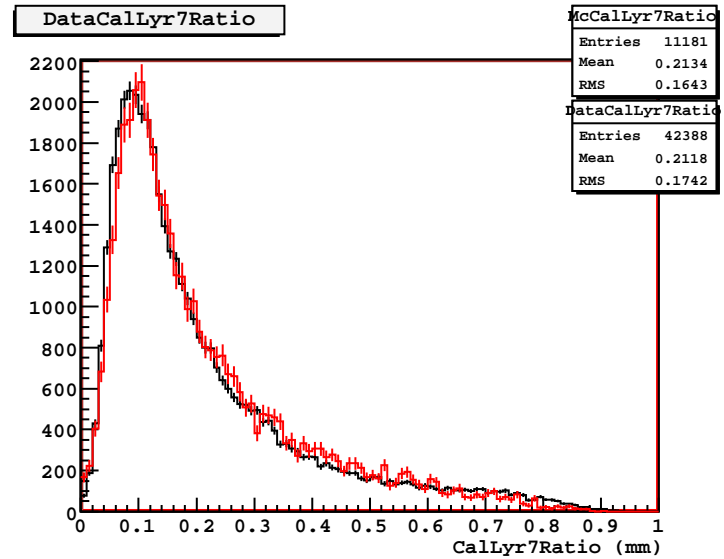
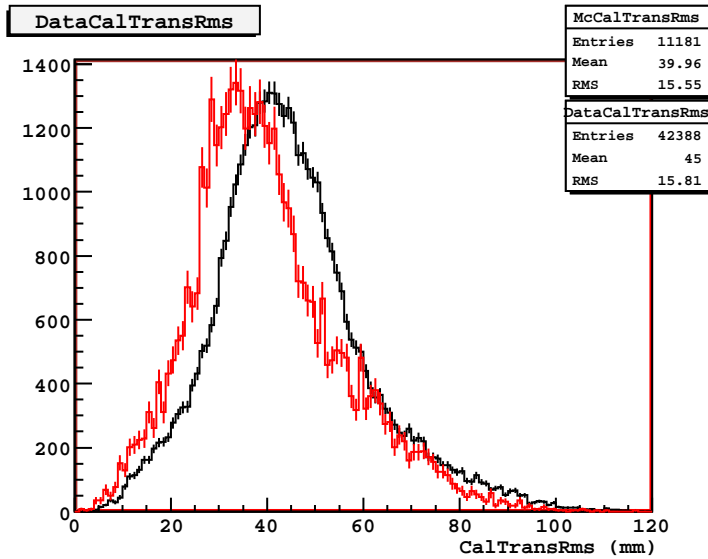
Protons 10GeV: 1419/GLAST



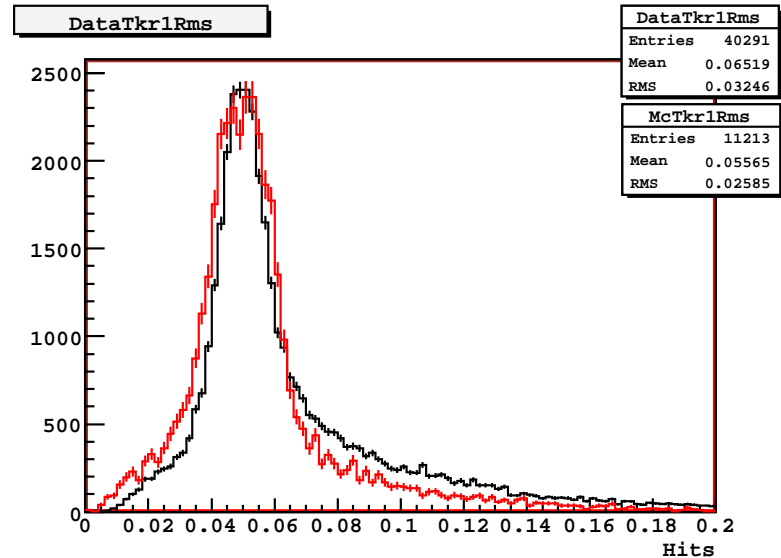
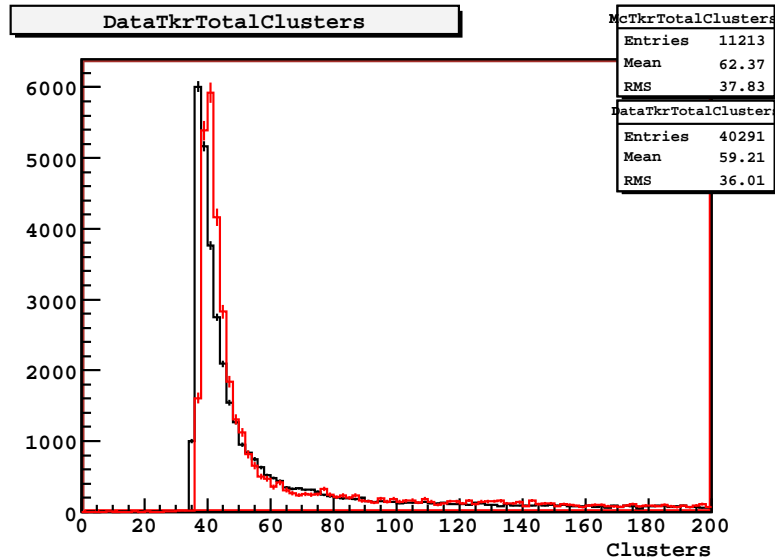
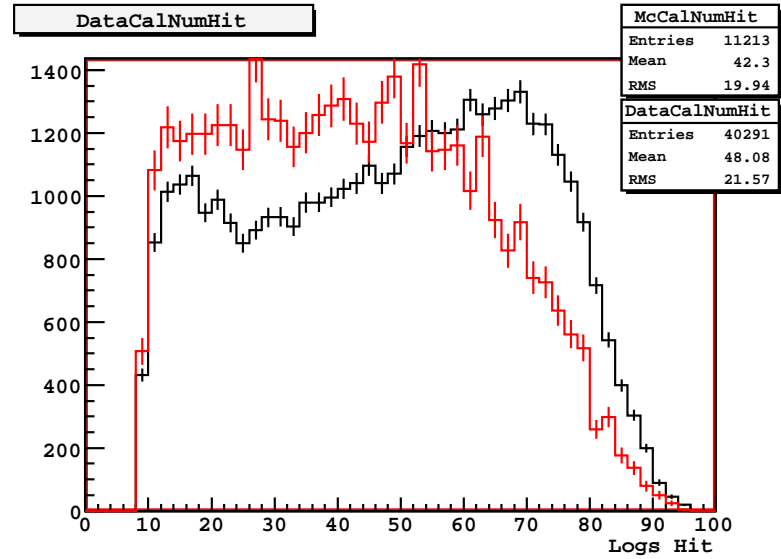
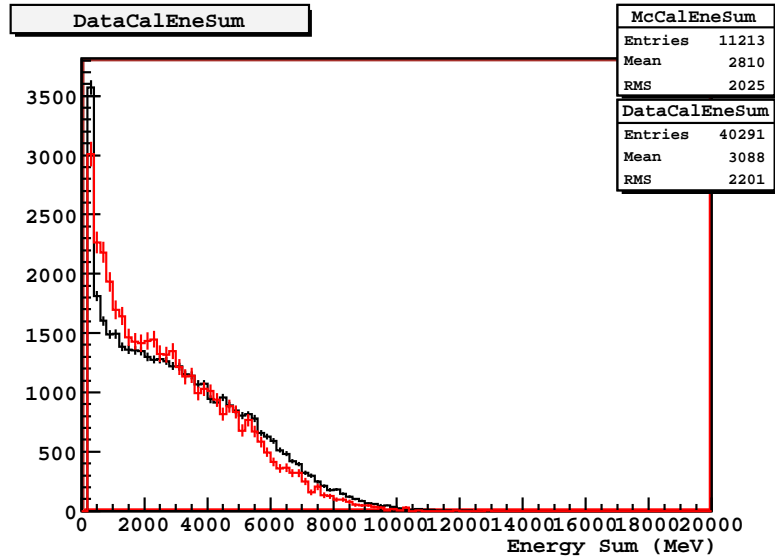
Protons 20GeV: 2237/GLAST



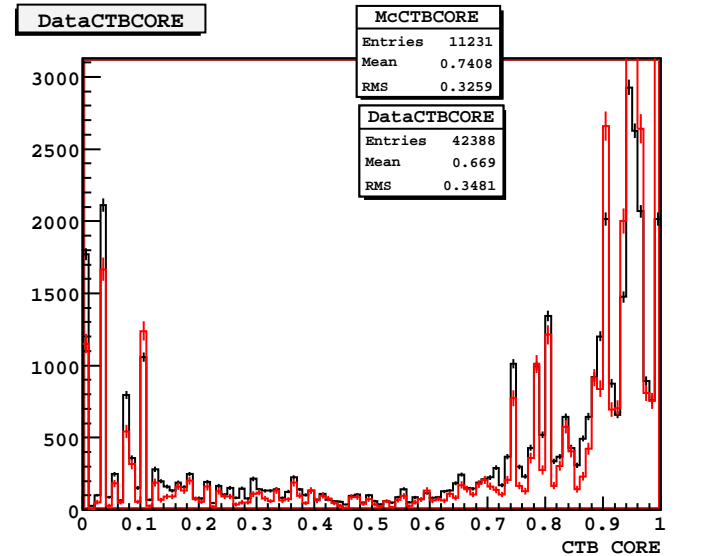
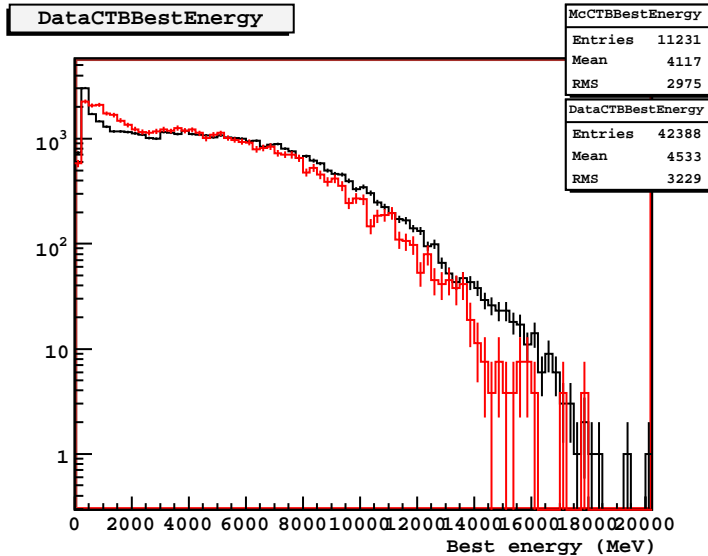
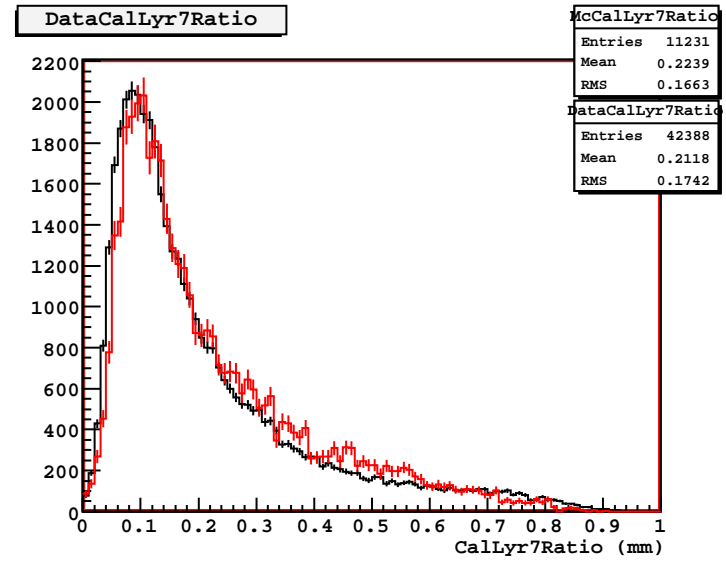
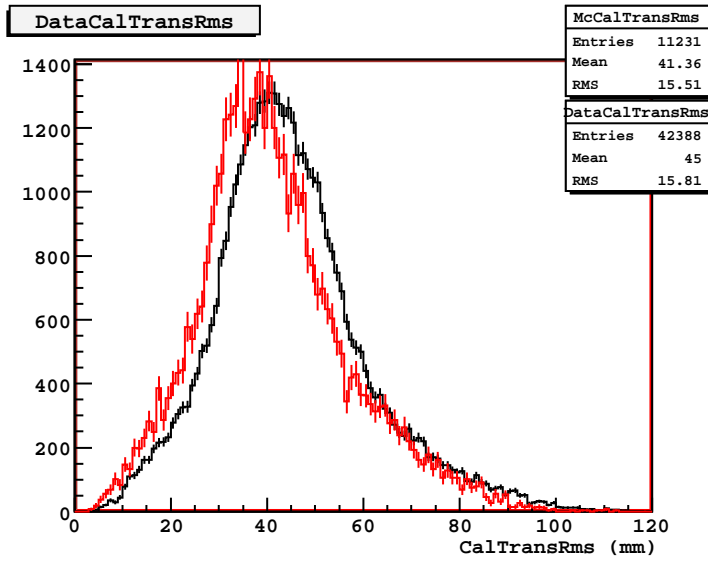
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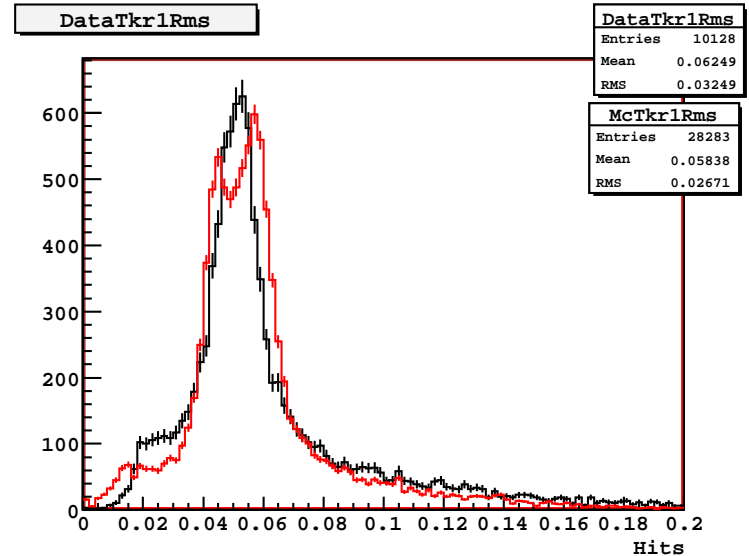
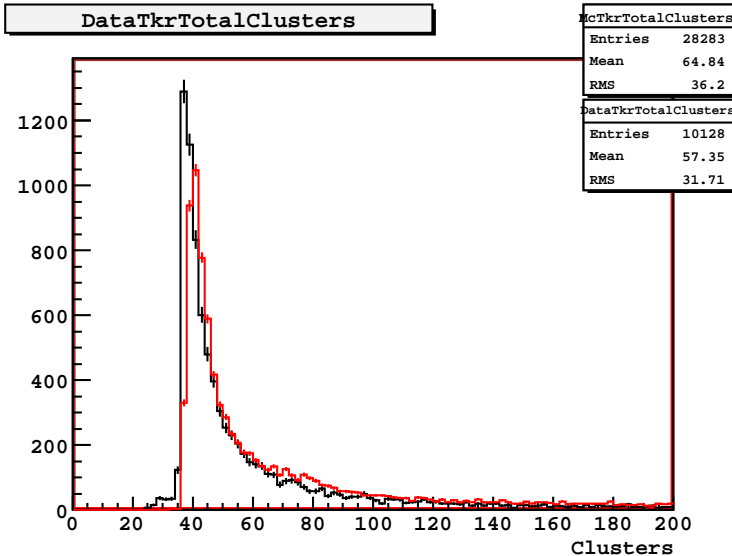
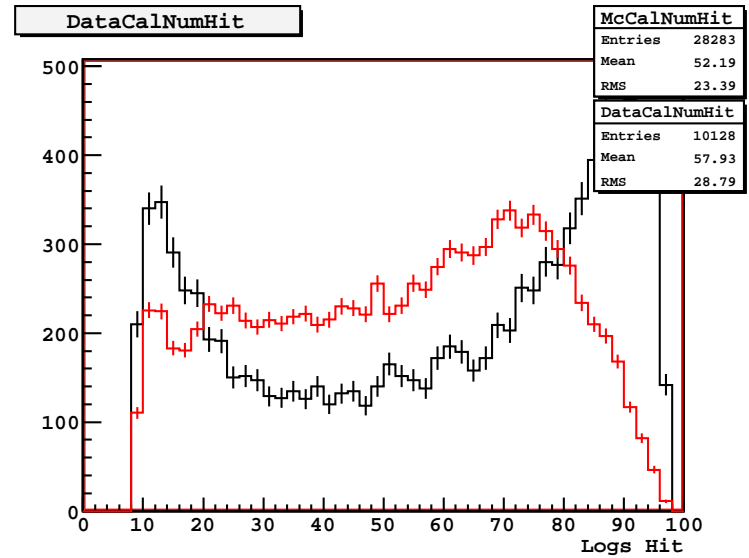
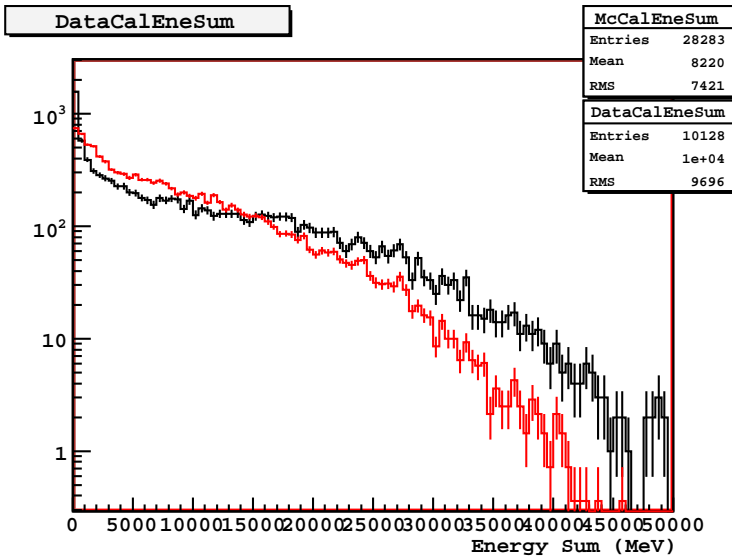
Protons 20GeV: 2237/QGSP_BERT



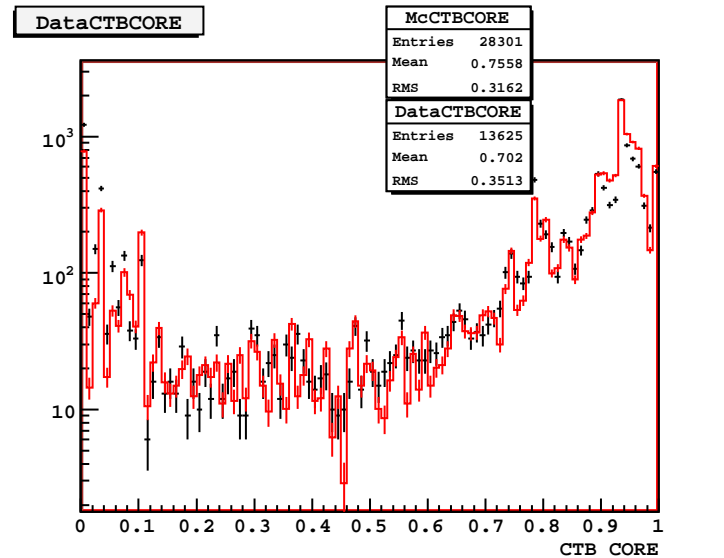
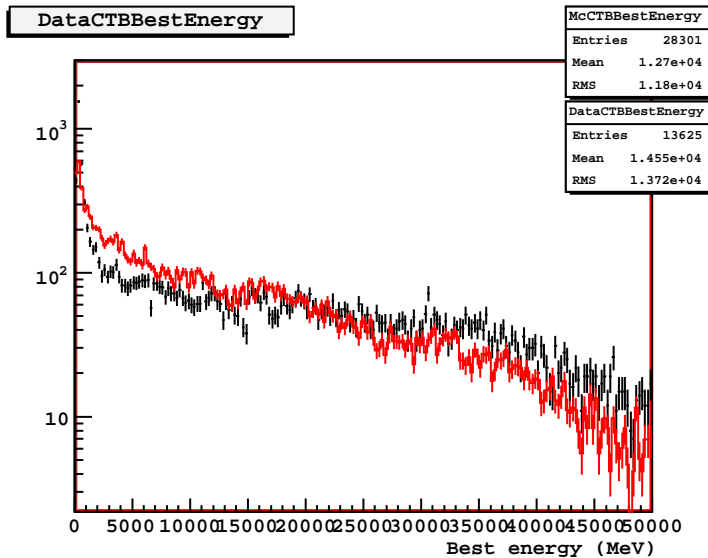
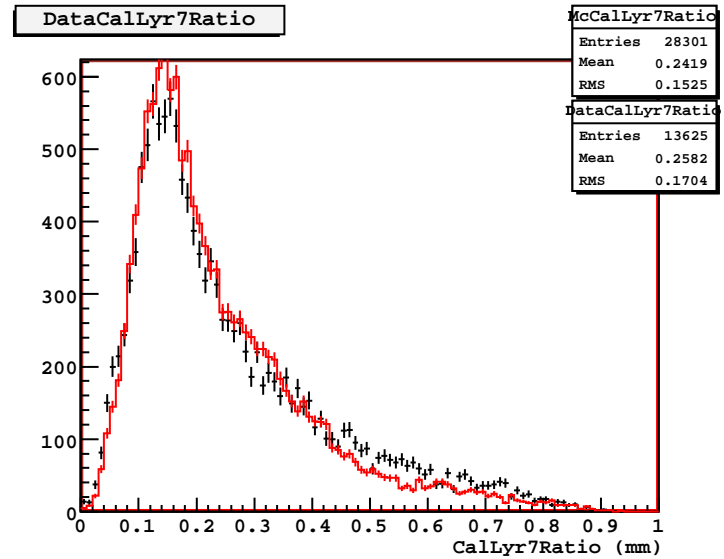
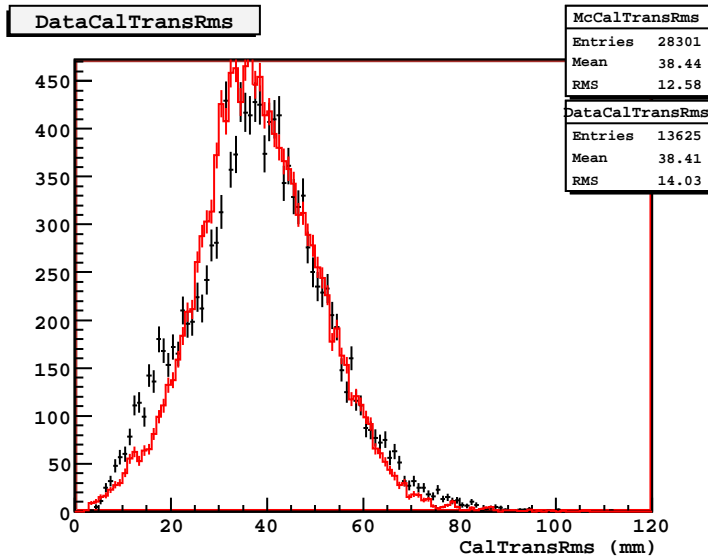
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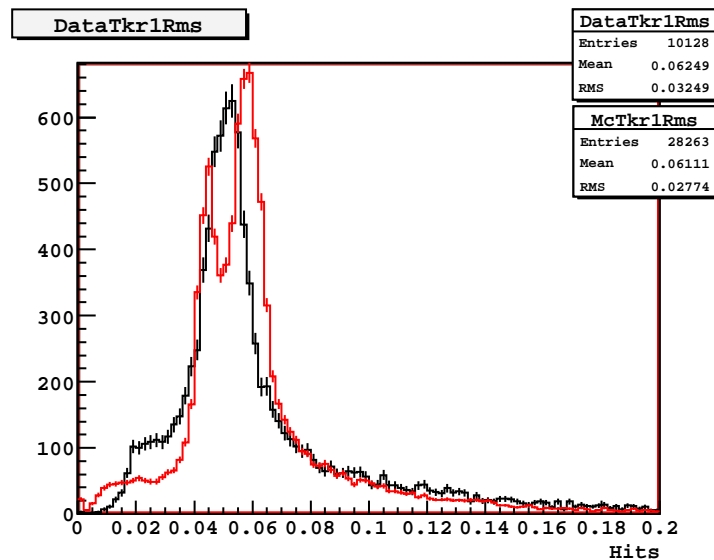
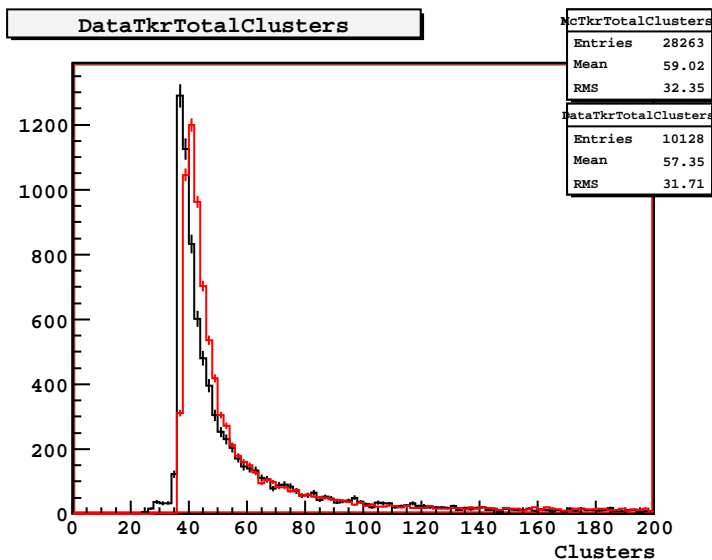
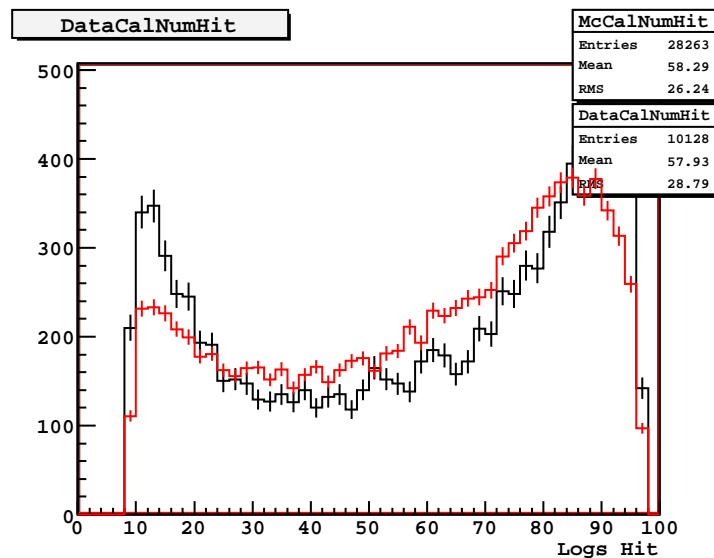
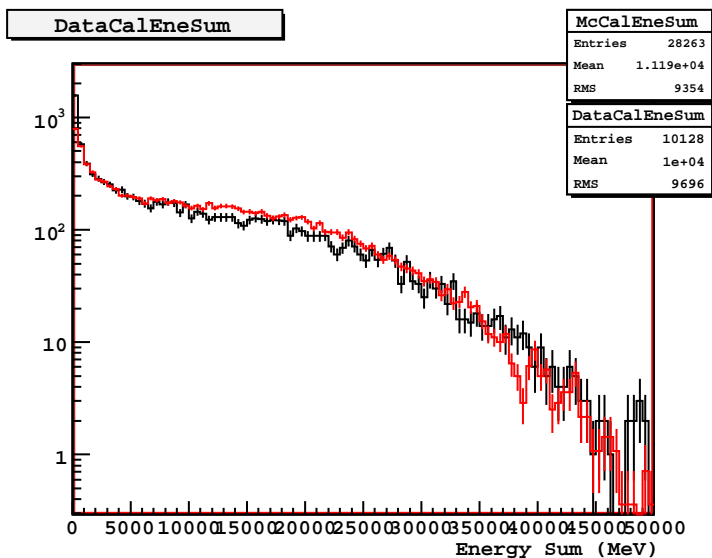
Protons 100GeV: 2363/GLAST



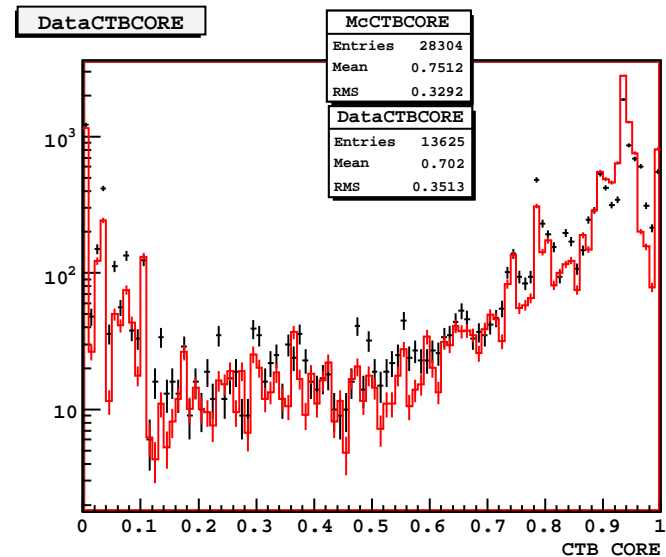
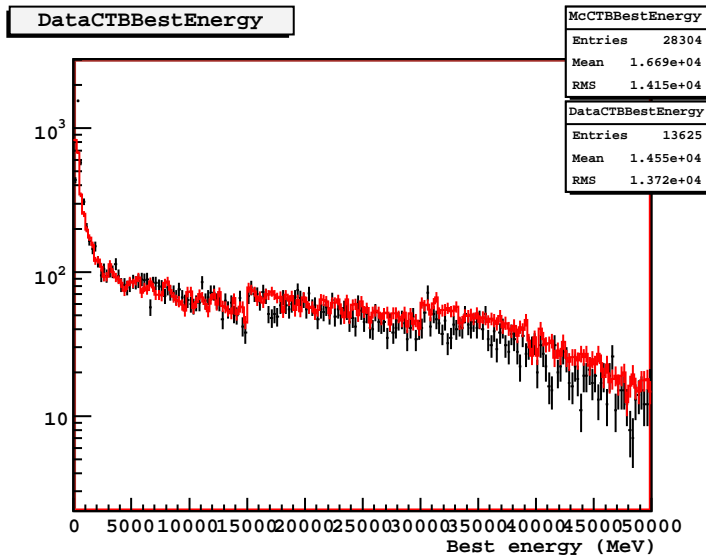
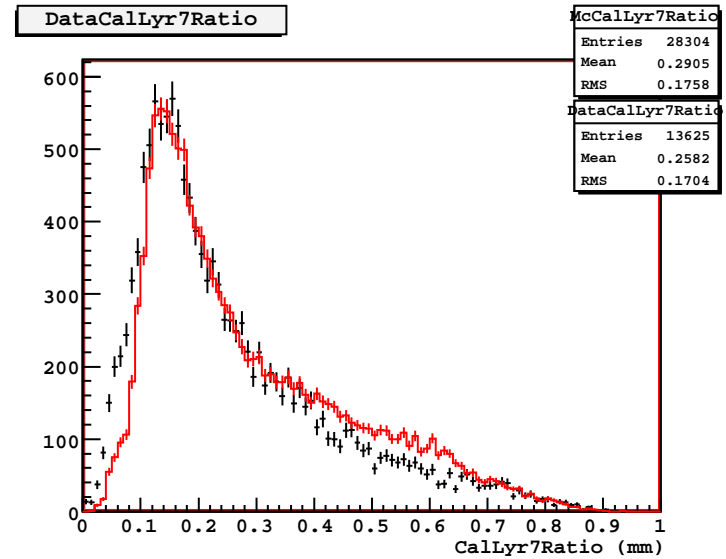
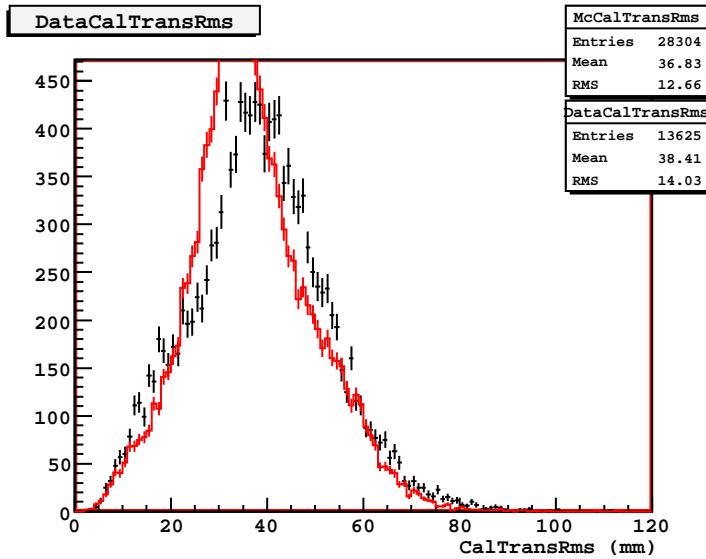
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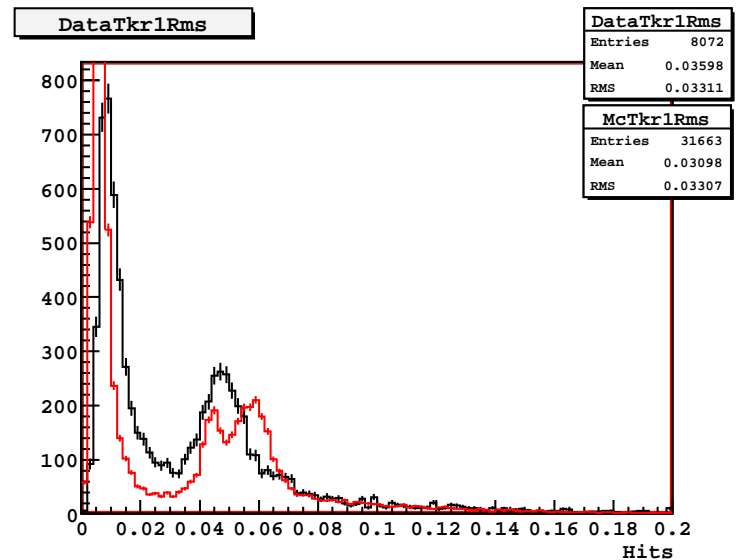
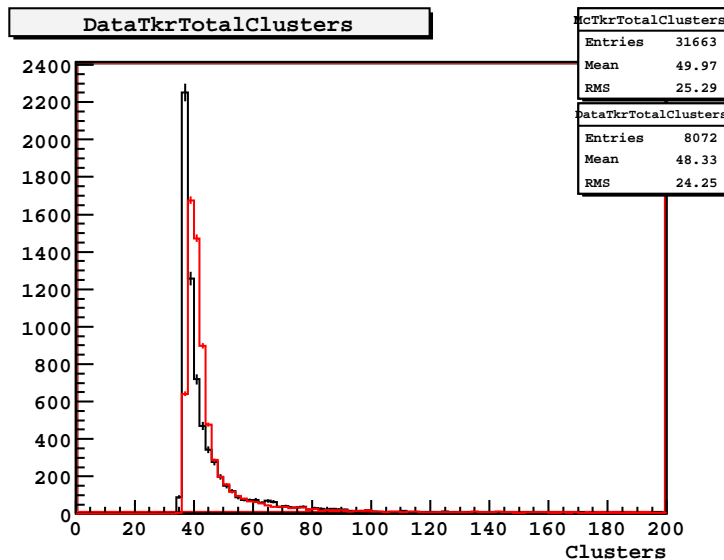
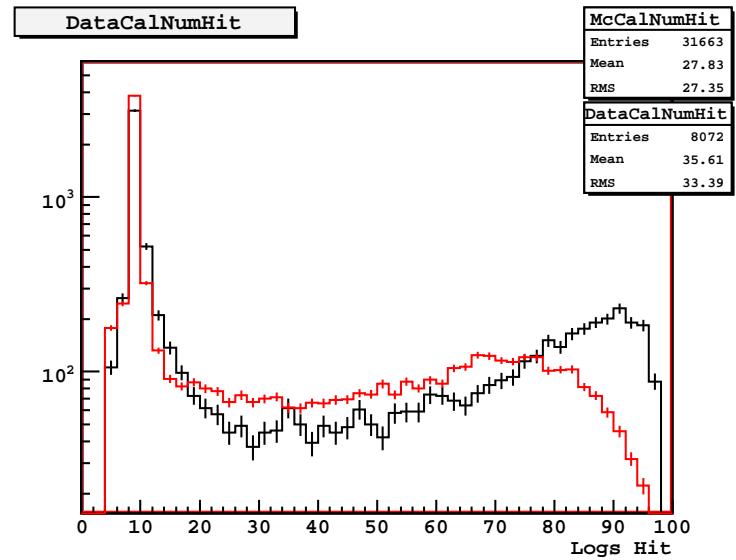
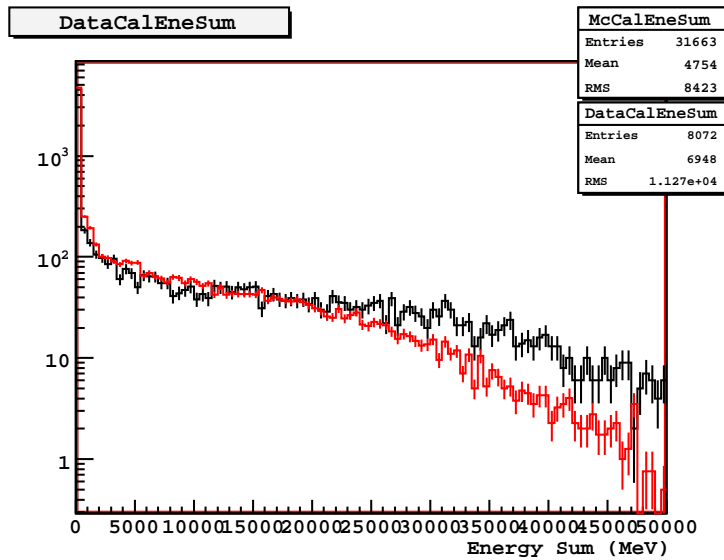
Protons 100GeV: 2363/QGSP_BERT



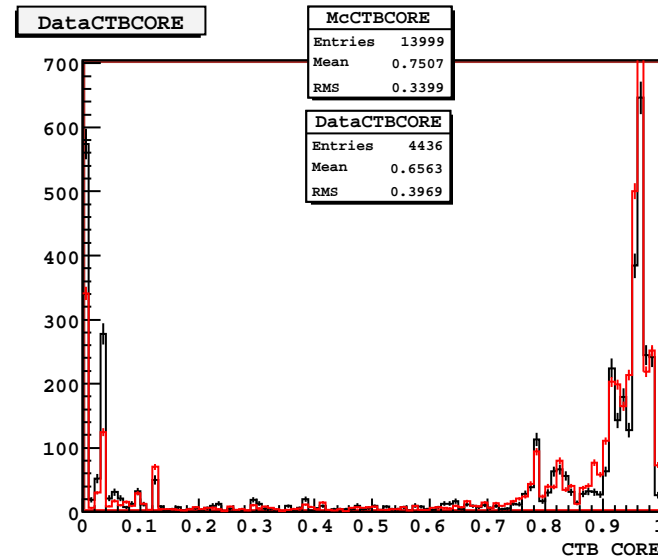
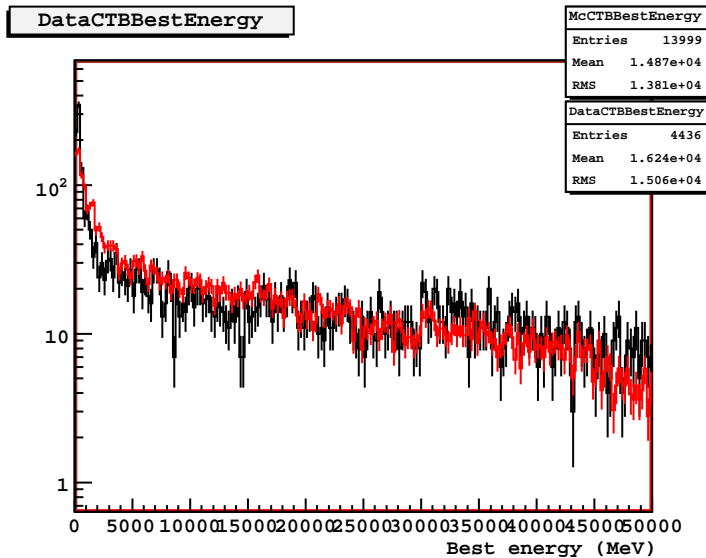
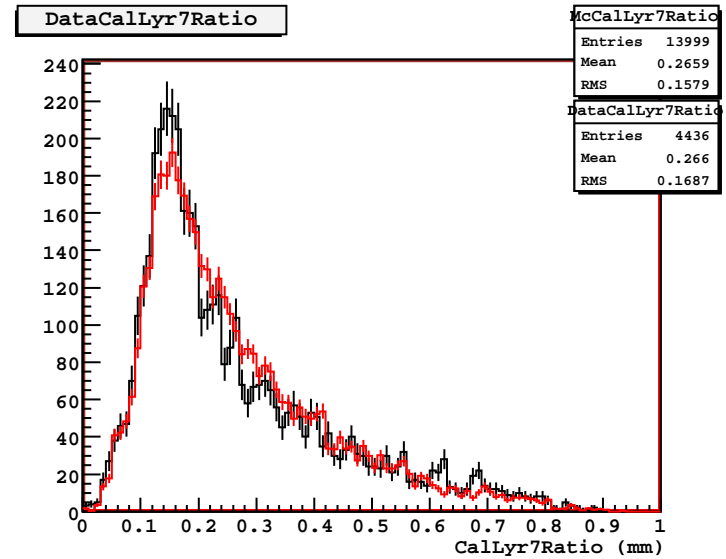
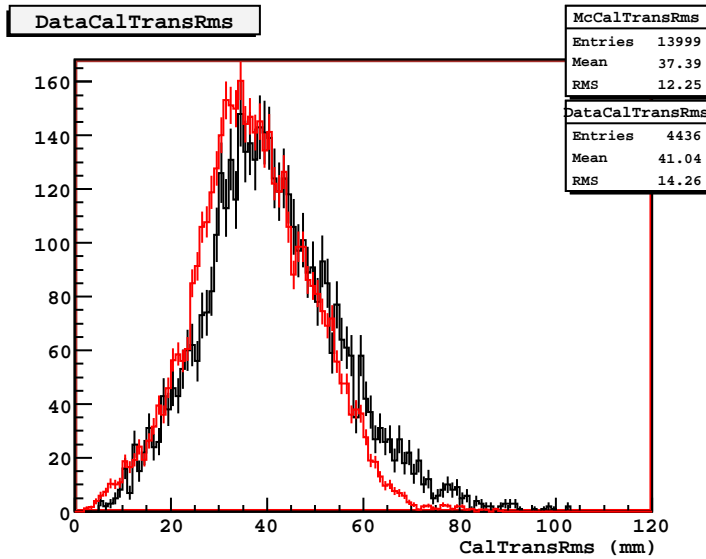
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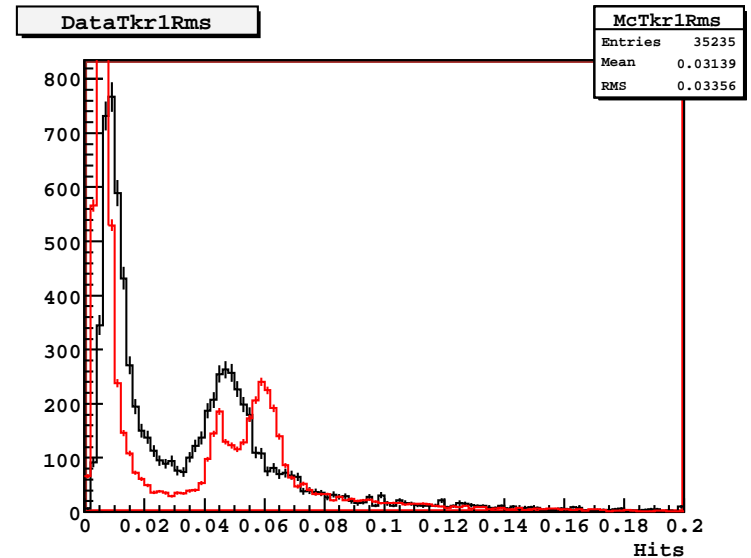
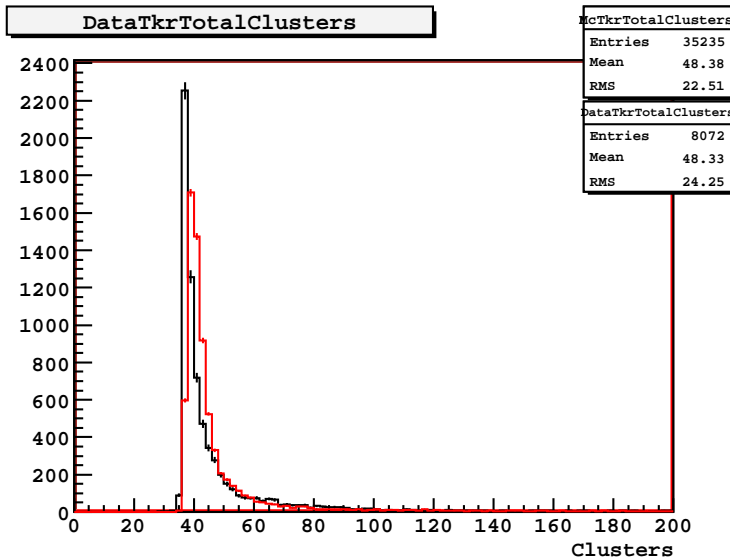
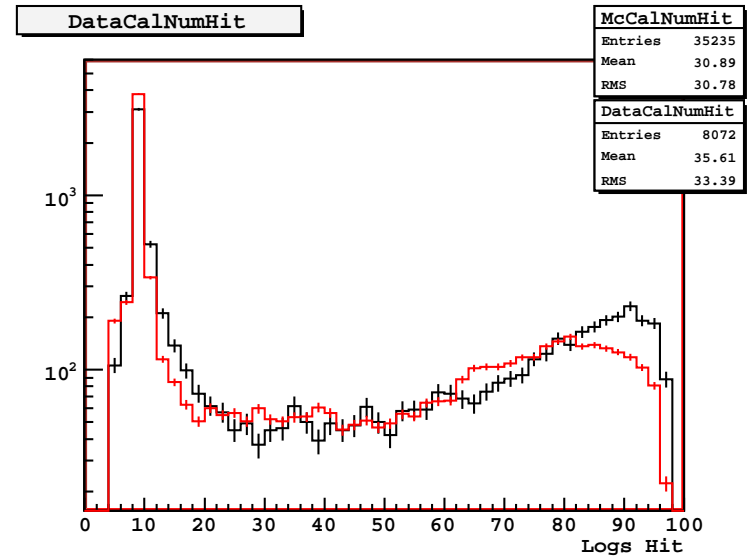
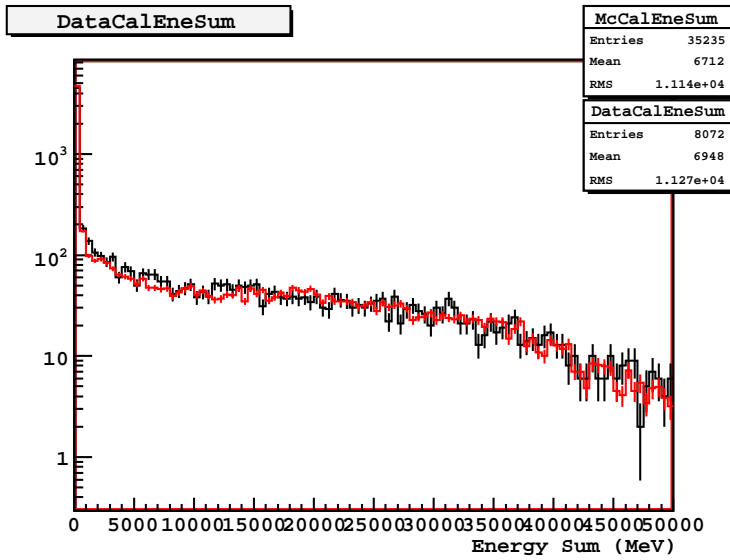
Protons 150GeV: 1755/GLAST



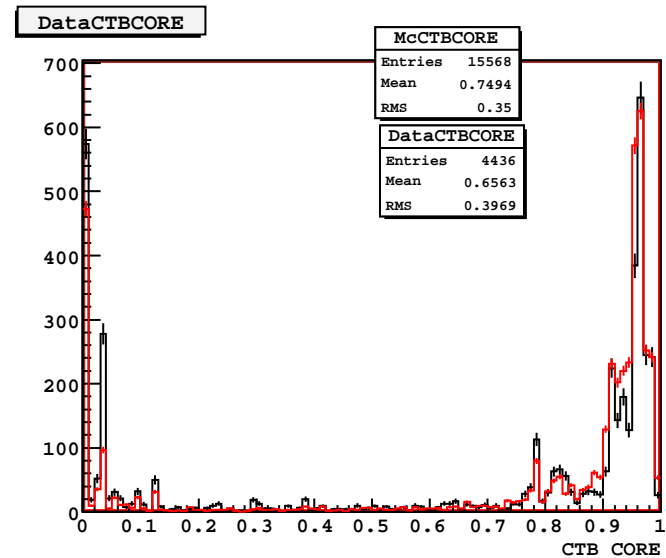
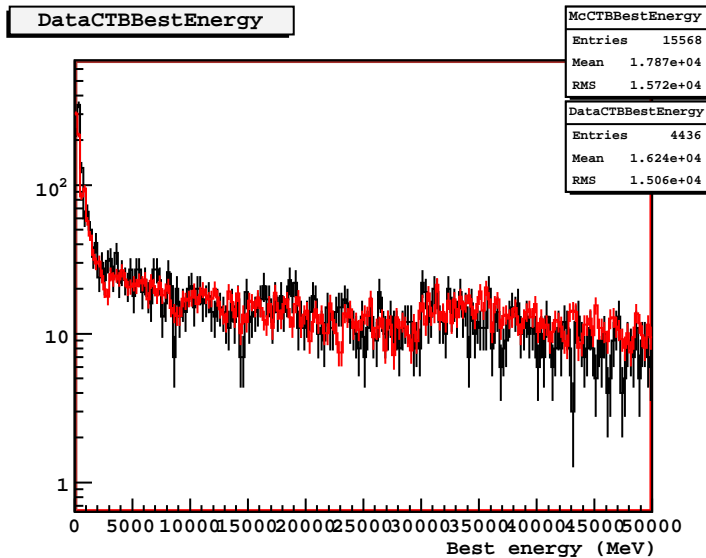
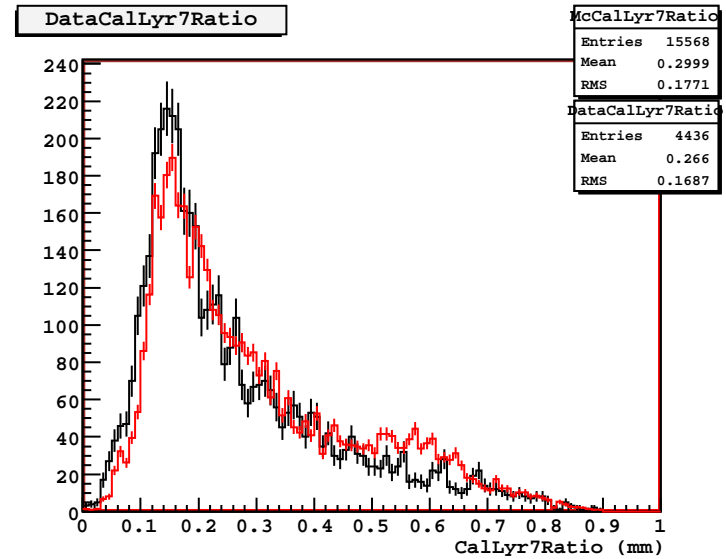
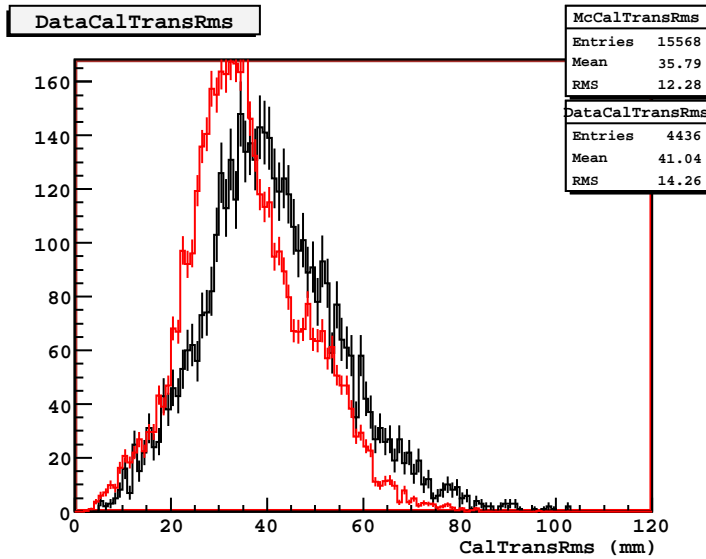
Protons 150GeV: 1755/GLAST



Protons 150GeV: 1755/QGSP_BERT



Protons 150GeV: 1755/QGSP_BERT



conclusions and issues

- Now have good overview
- Biggest discrepancy show around 20GeV (all models give the same results)
- Best actual physics_list is "QGSP_BERT"
- would love to try QGSC
- Need to understand CalTransRms (crucial variable ?)
- New Mc to be produced in the pipeline with improved BeamSpot
- Started to look runs at an angle
- probably need to re-write my analysis code to produce *final* plots
- how come that the agreement is so good at 100GeV/150GeV ?