

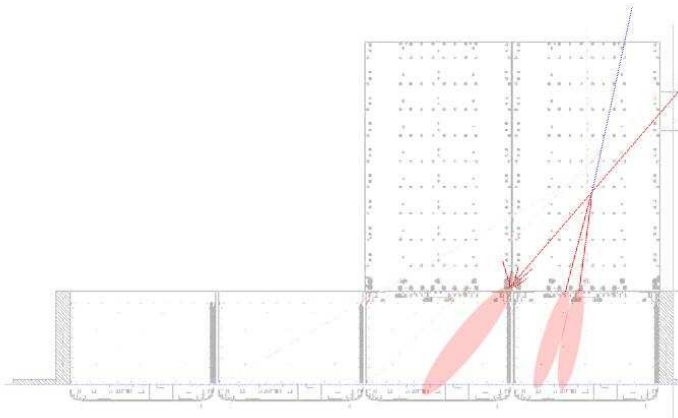
GLAST CERN 2006 Beamtest



Update on Hadronic Cascades

Johan Bregeon (INFN-Pisa)

Beamtest Analysis - April 18th, 2007



Physics Lists

GLAST	Custom, ask Franz (LHEP-BERT)
LC:	ILC Physics List by Dennis Wright.
LHEP:	Low and High Energy Parameterised
LHEP_BIC:	LHEP with Binary Cascade
LHEP_BERT:	LHEP with Bertini Cascade
QGSP:	Quark gluon-string with precompound
QGSP_BIC:	QGSP with Binary Cascade
QGSP_BERT:	QGSP with Bertini Cascade
QGSC:	<i>Quark gluon-string with CHIPS</i>
QGSC_LEAD:	<i>QGSC with leading particle</i>

- QGSC not implemented yet in BeamtestRelease

runs 0°

Pions	PS	5GeV	0degree	[823-824-826-827-828-830]	[LHEP, LHEP-BERT, LHEP-BIC]
Protons	PS	6GeV	0degree	[1423]	[LHEP, LHEP-BERT, LHEP-BIC]
Protons	PS	10GeV	0degree	[1419]	[LHEP, LHEP-BERT, LHEP-BIC]
Protons	SPS	20GeV	0degree	[2237]	[LHEP, QGSP, QGSP_BERT, QGSP_BIC, QGSC, QGSC_LEAD]
Pions	SPS	20GeV	0degree	[2298, 2304]	[LHEP, QGSP, QGSP_BERT, QGSP_BIC, QGSC, QGSC_LEAD]
Protons	SPS	100GeV	0degree	[2363]	[LHEP, QGSP, QGSP_BERT, QGSP_BIC, QGSC, QGSC_LEAD]
Protons	SPS	150GeV	0degree	[1755/1756-1757/1758]	[LHEP, QGSP, QGSP_BERT, QGSP_BIC, QGSC, QGSC_LEAD]

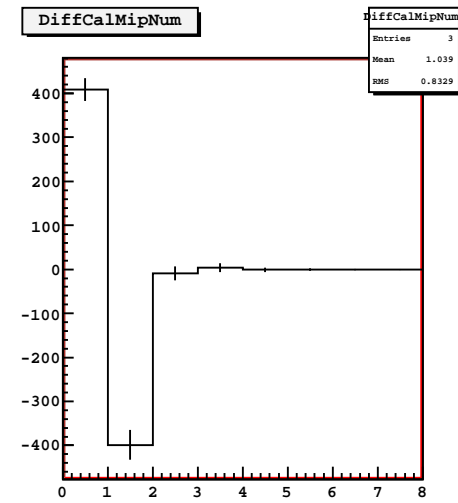
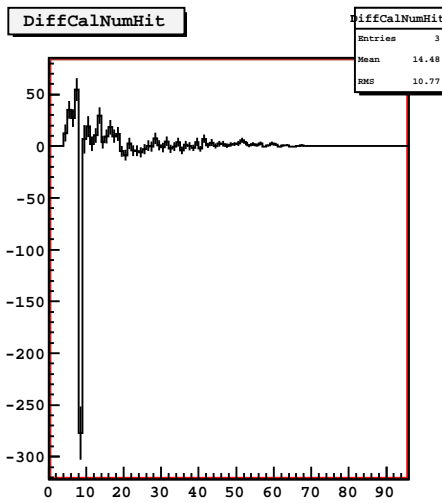
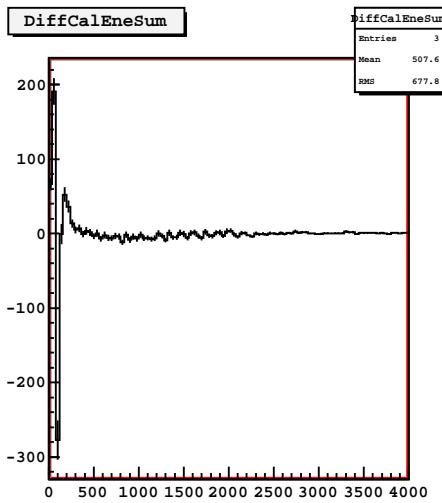
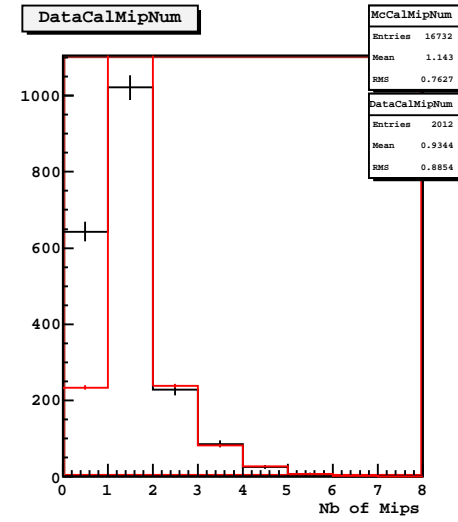
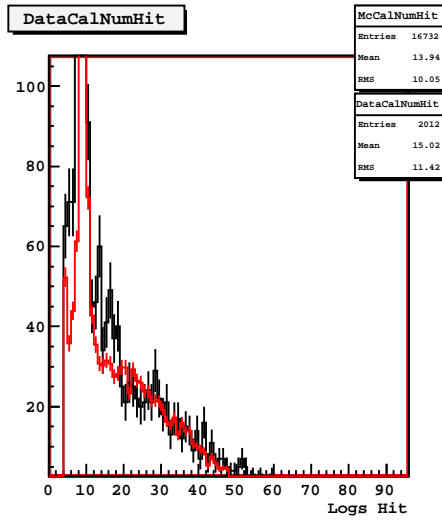
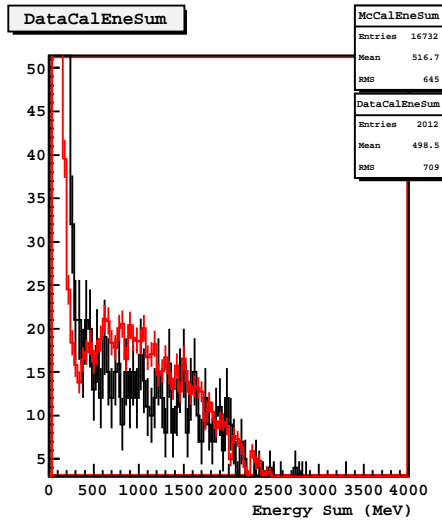
- Many MC to be run.
- We also have many runs at different angles.
- In the following plots I have used only **GLAST** physics list.

runs 0°

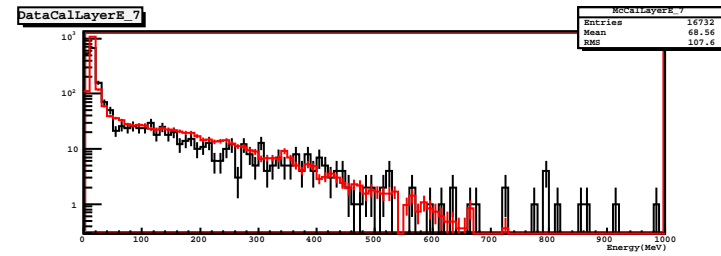
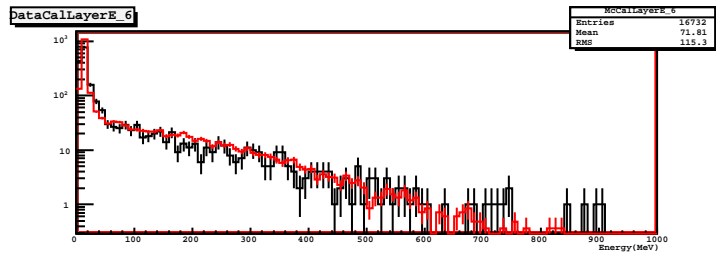
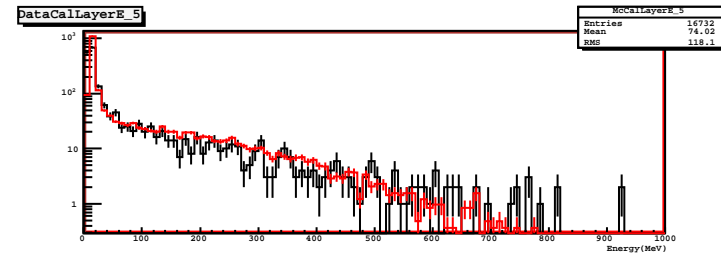
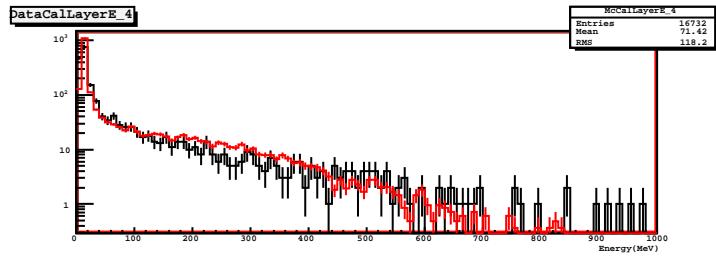
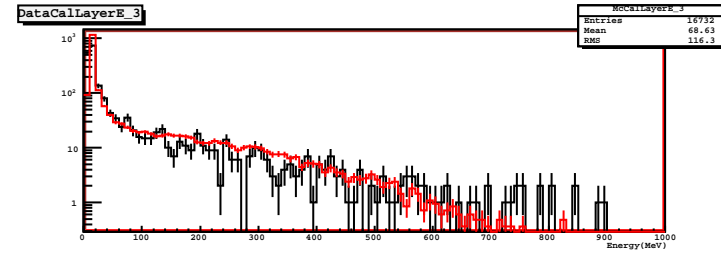
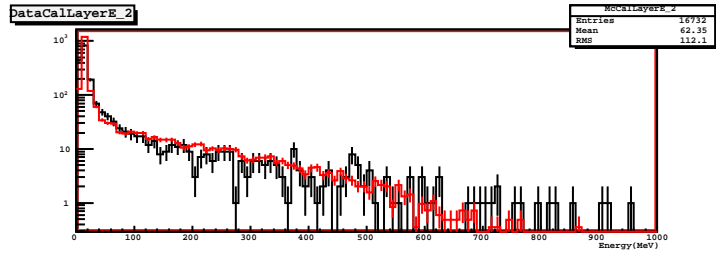
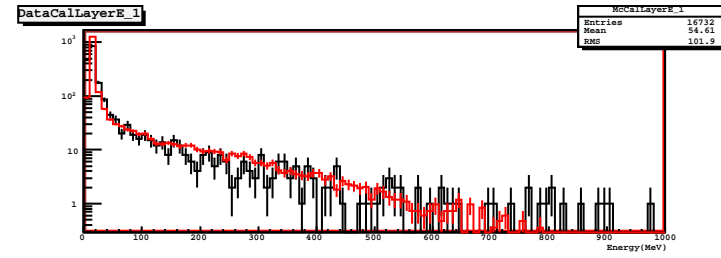
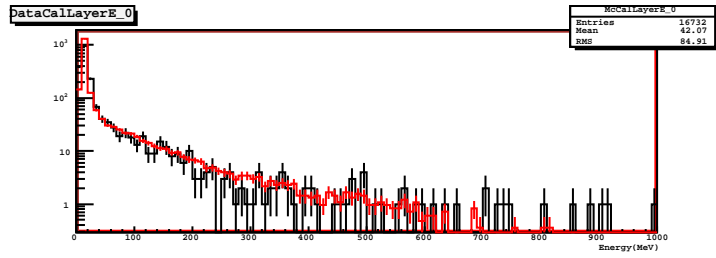
Pions	PS	5GeV	0degree	[823-824-826-827-828-830]	[LHEP, LHEP-BERT, LHEP-BIC]
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- Many MC to be run.
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- In the following plots I have used only **GLAST** physics list.
- Data in black and MC in red

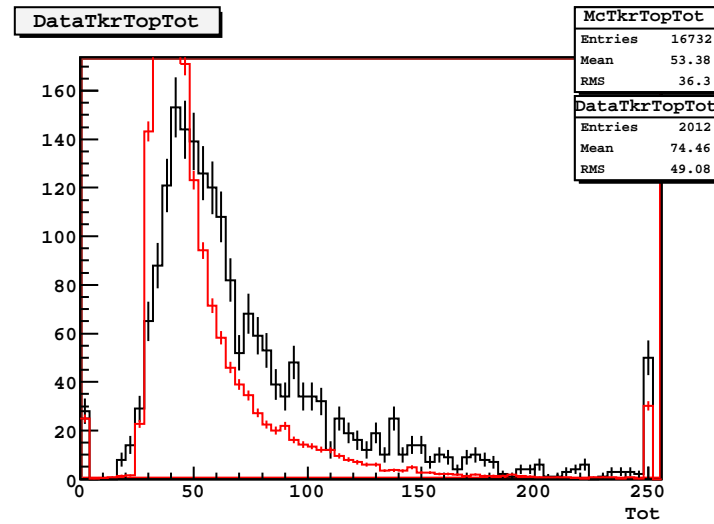
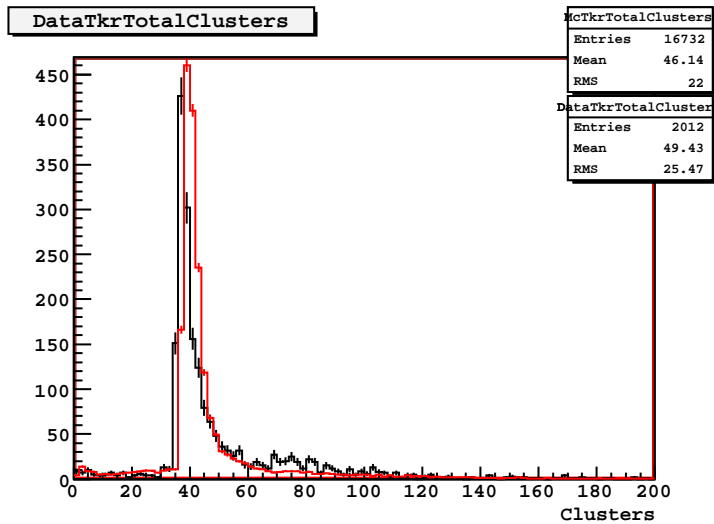
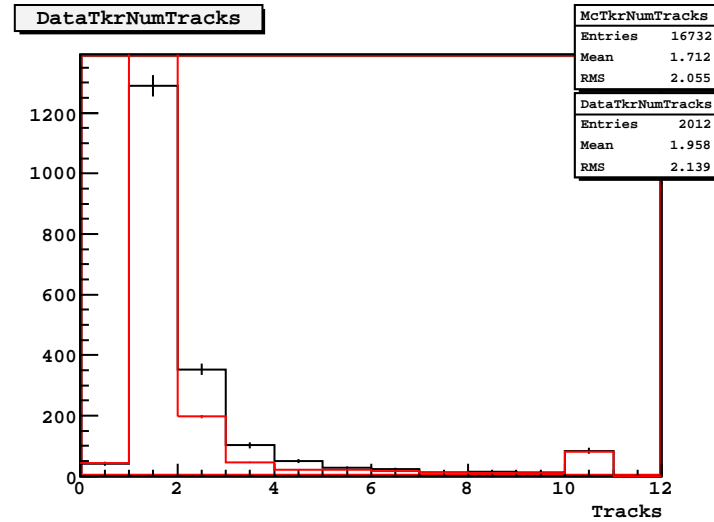
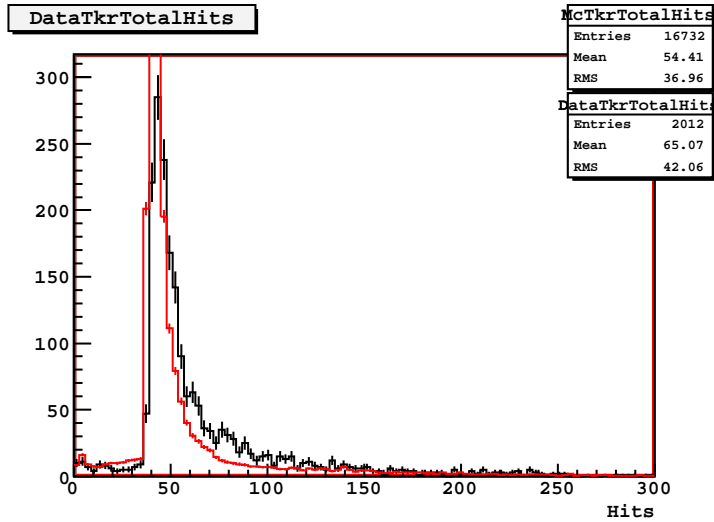
Pions 5GeV: 0823



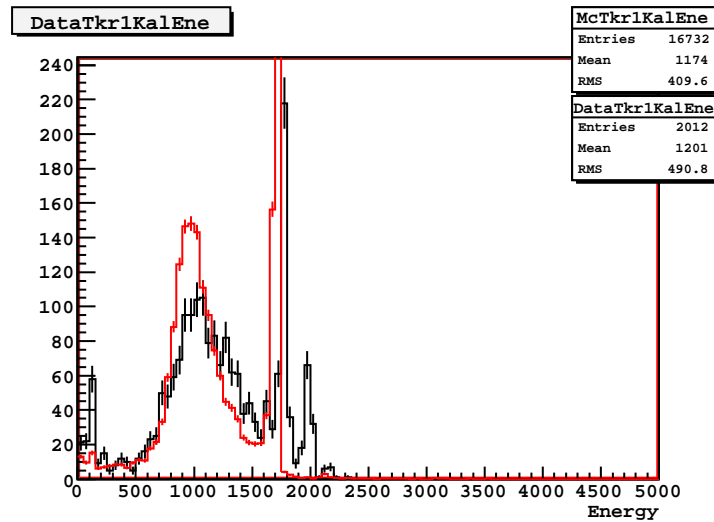
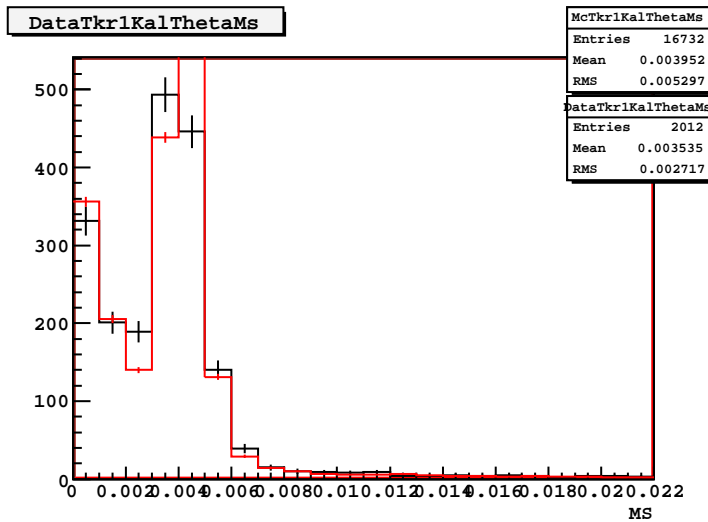
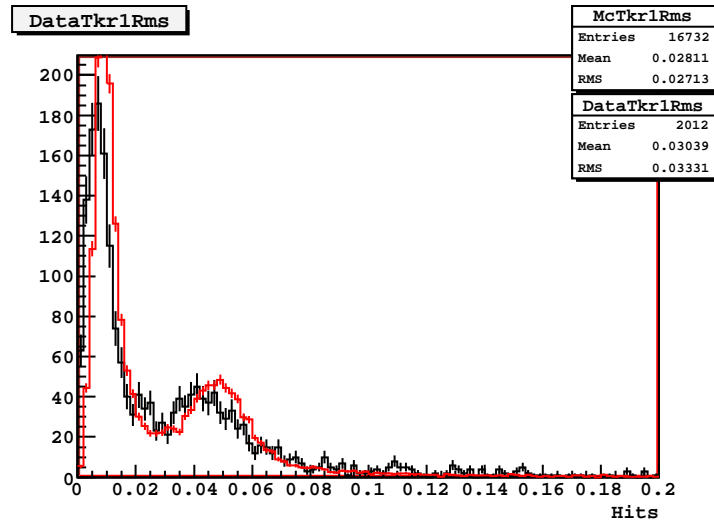
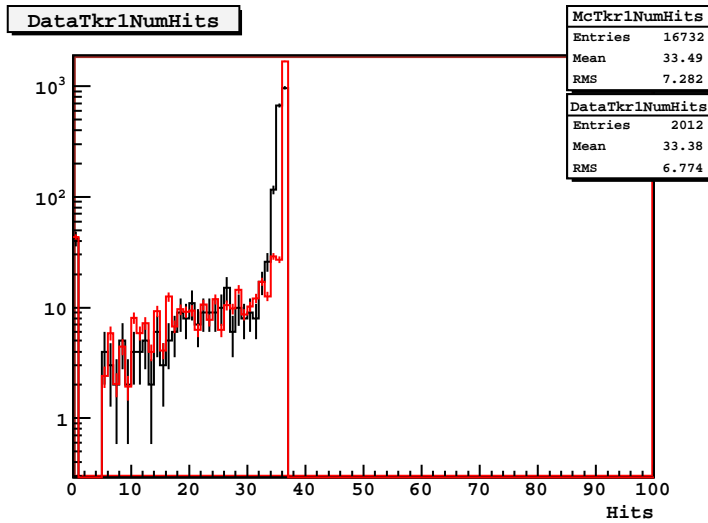
Pions 5GeV: 0823



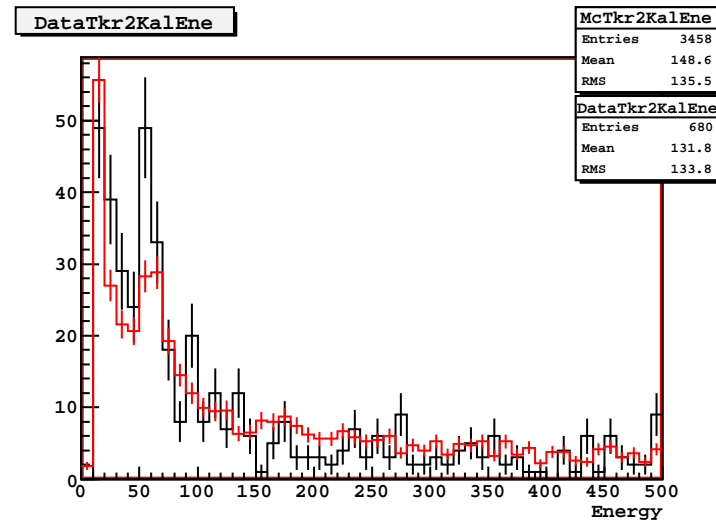
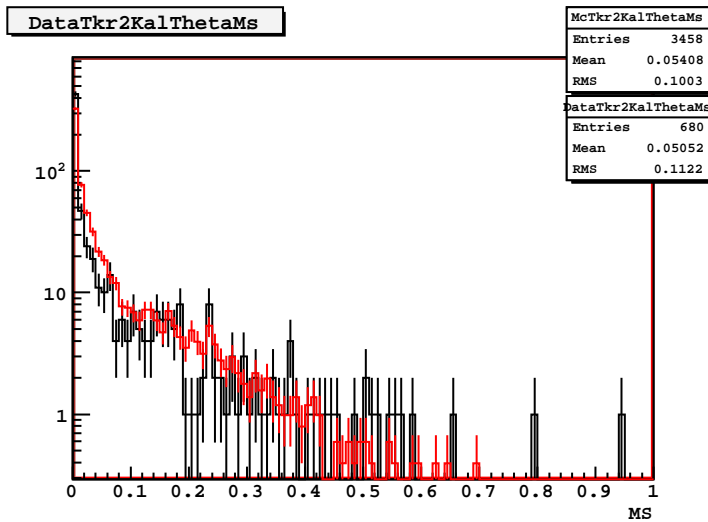
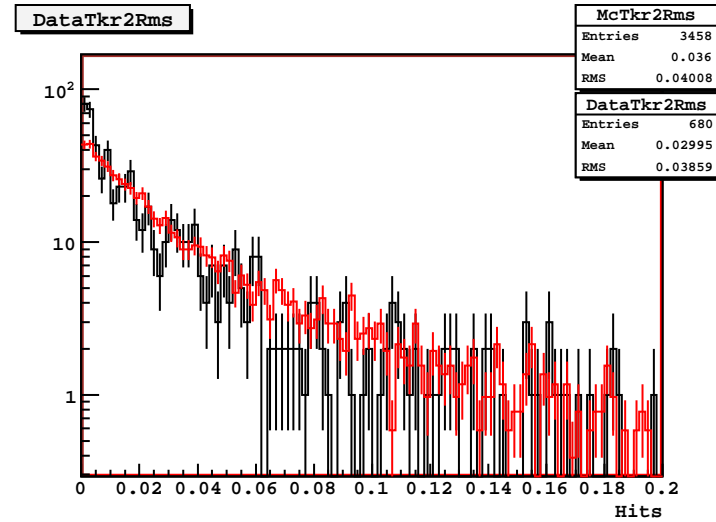
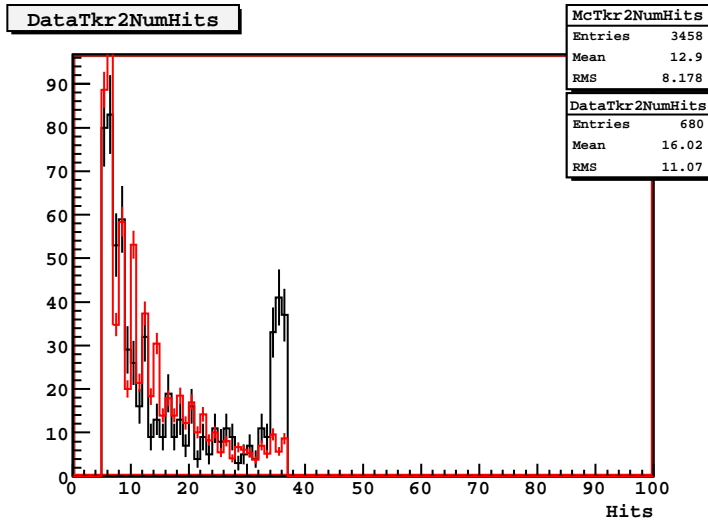
Pions 5GeV: 0823



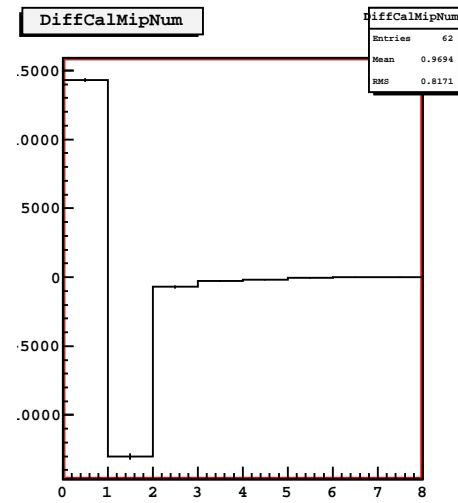
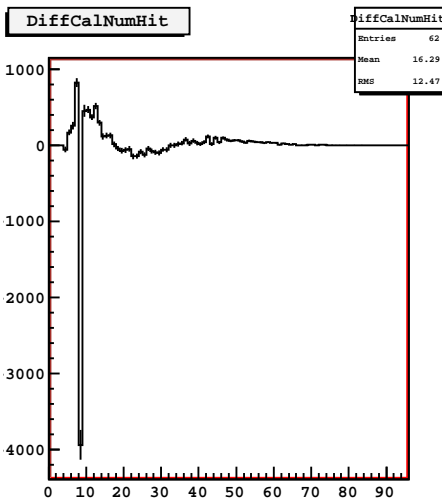
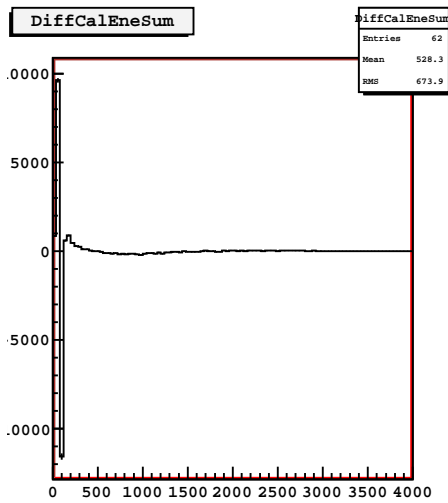
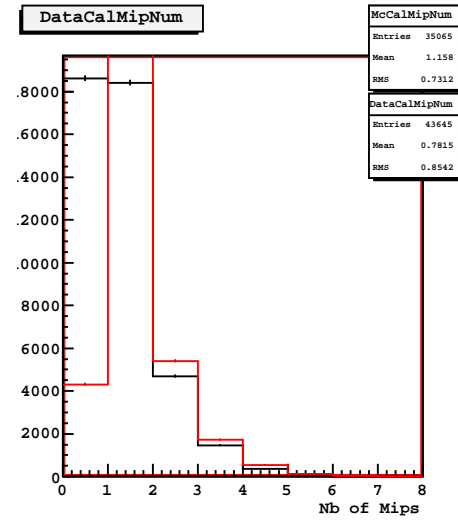
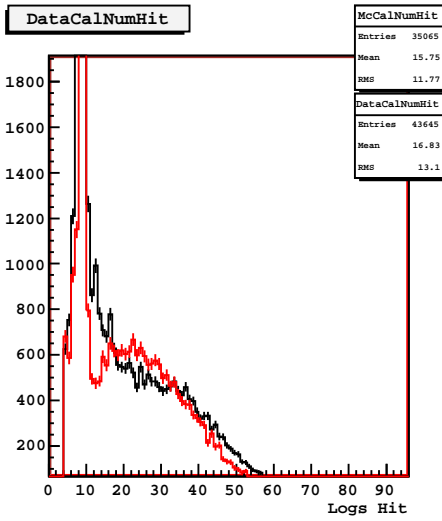
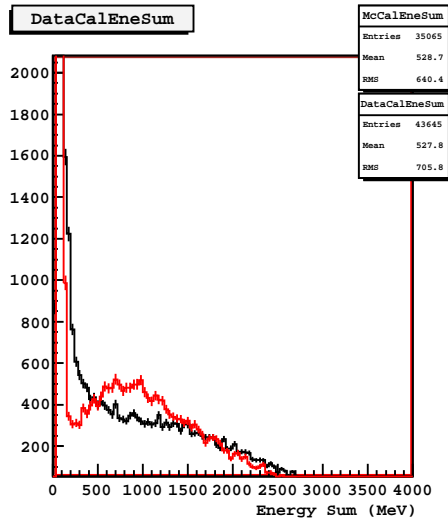
Pions 5GeV: 0823



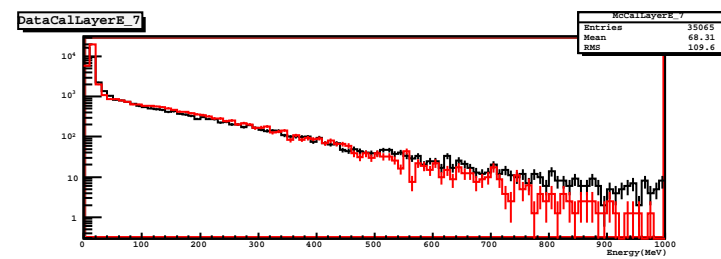
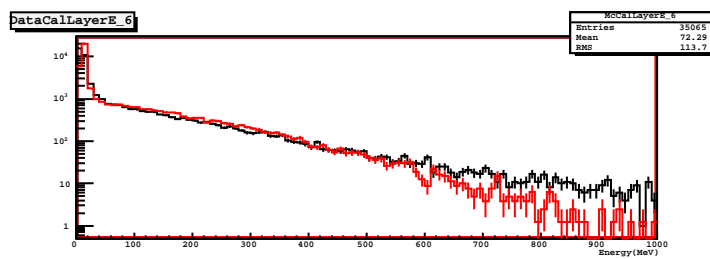
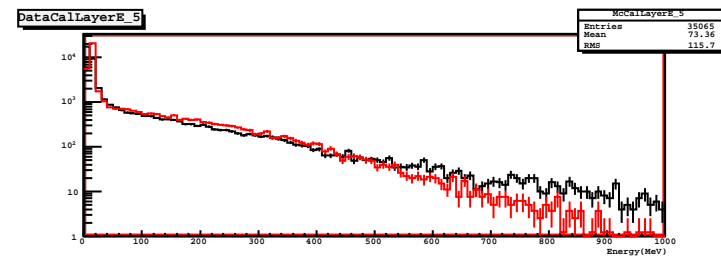
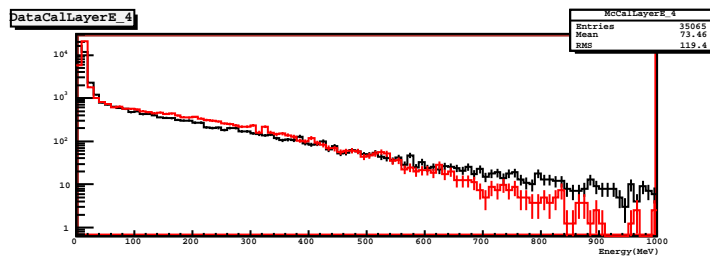
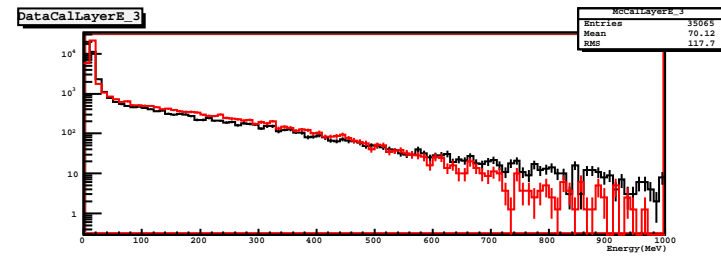
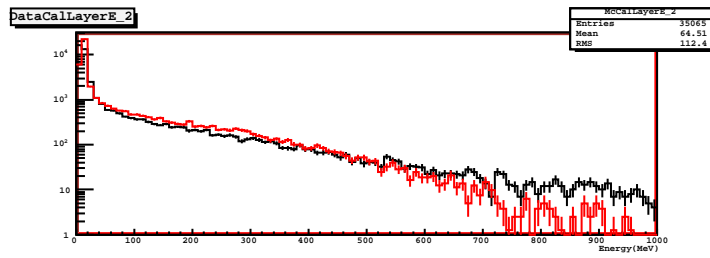
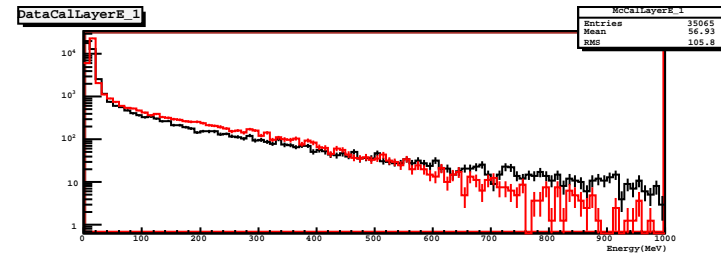
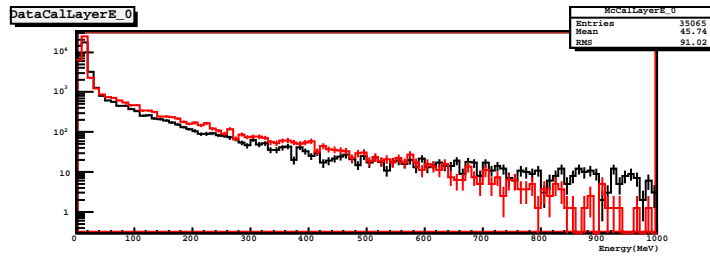
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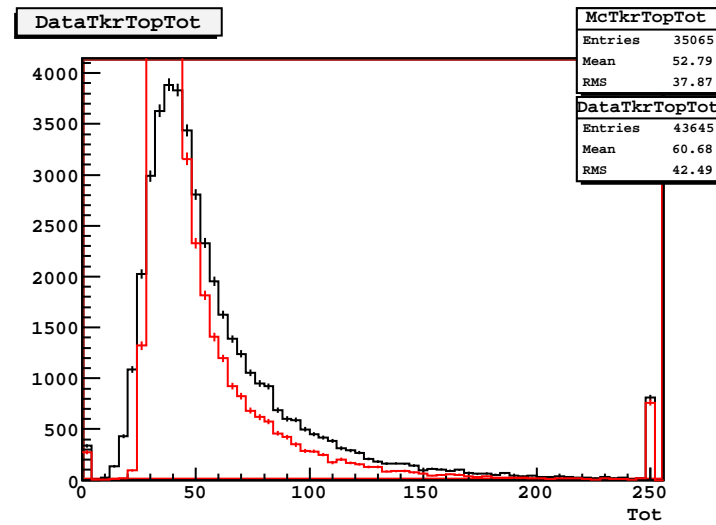
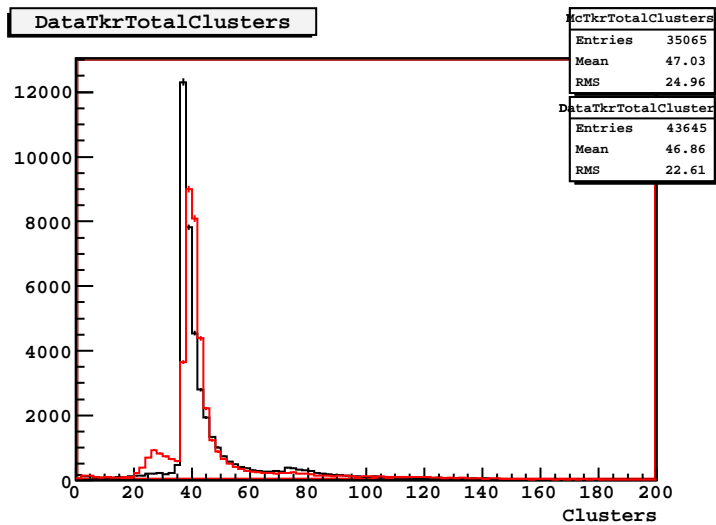
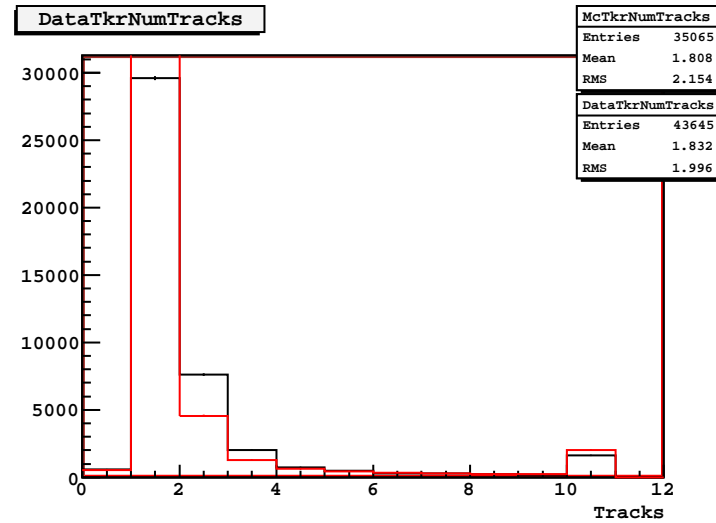
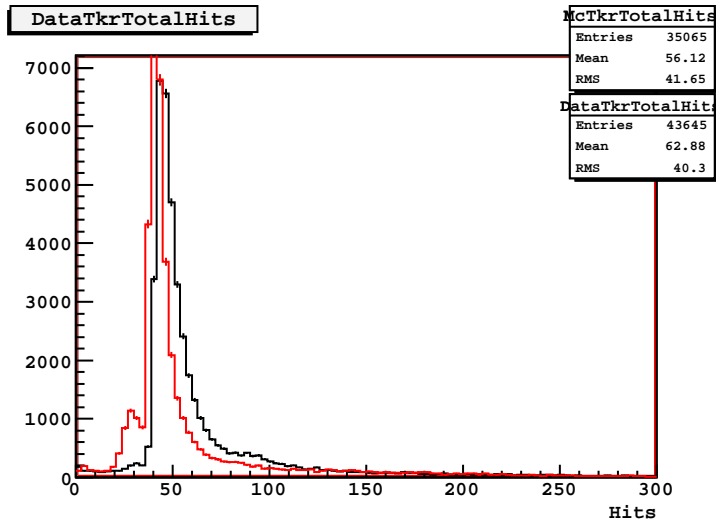
Protons 6GeV: 1423



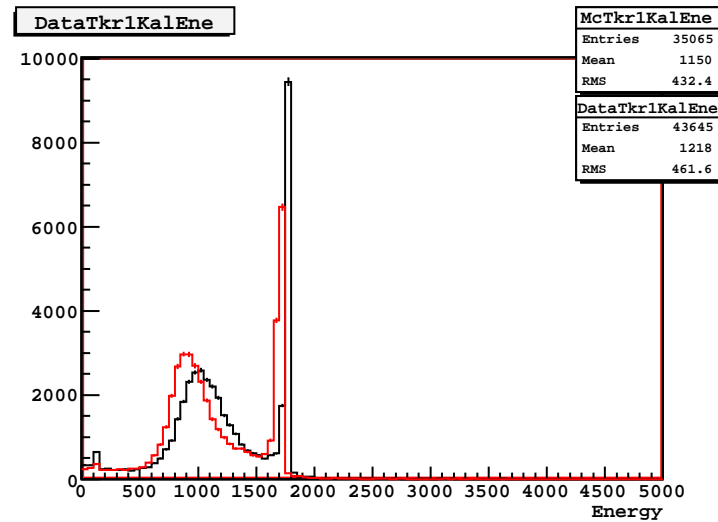
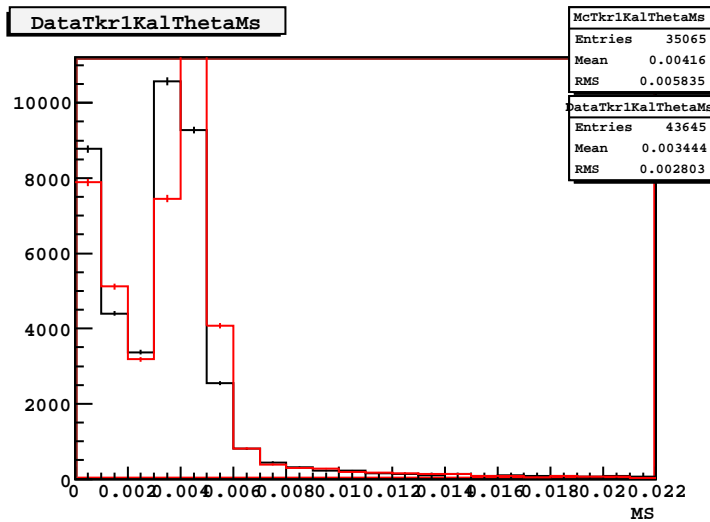
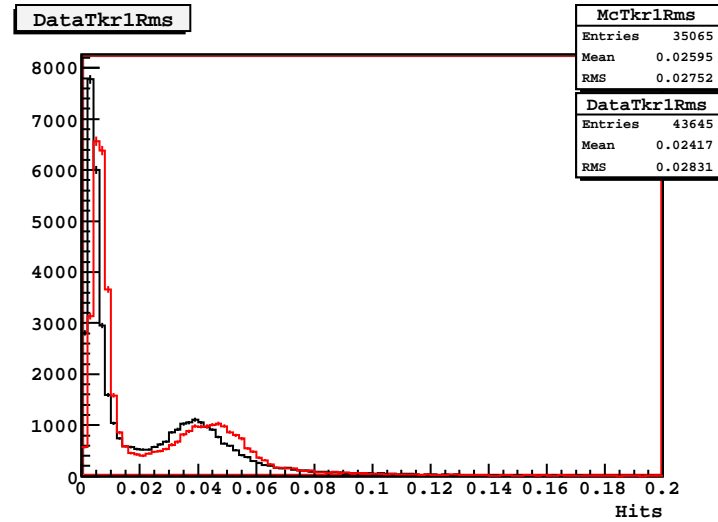
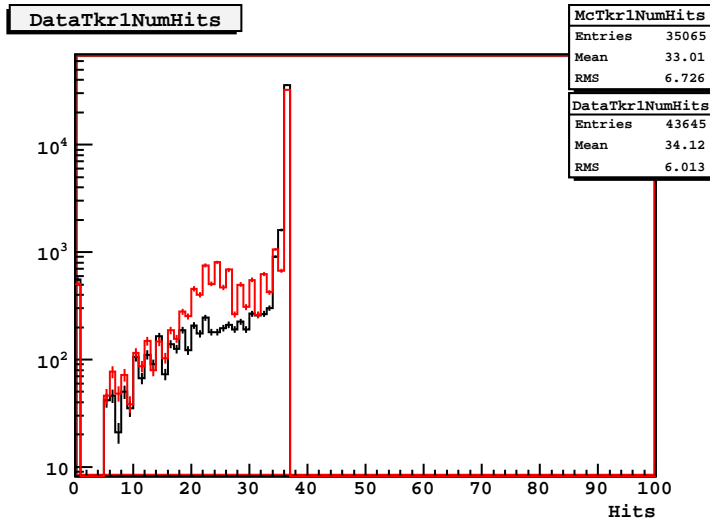
Protons 6GeV: 1423



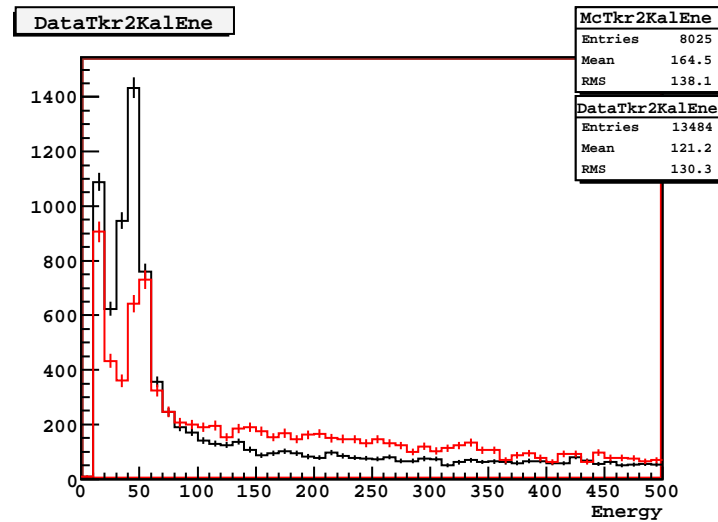
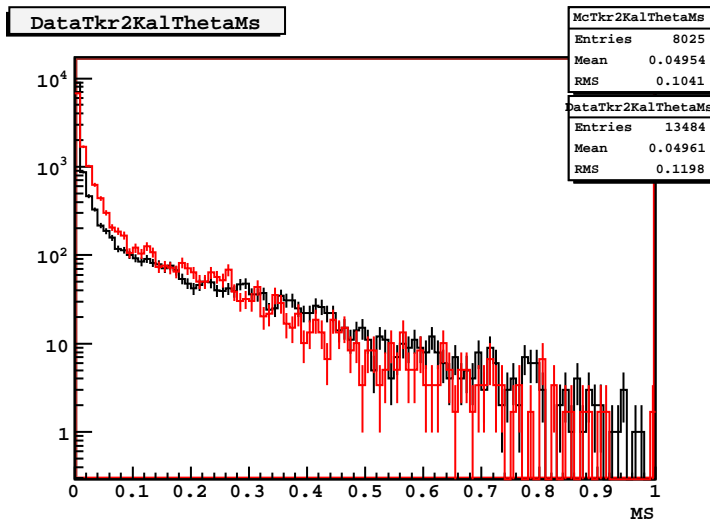
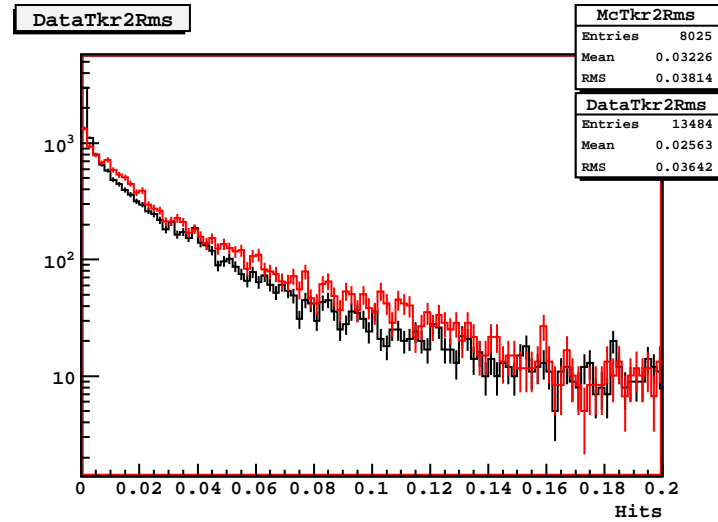
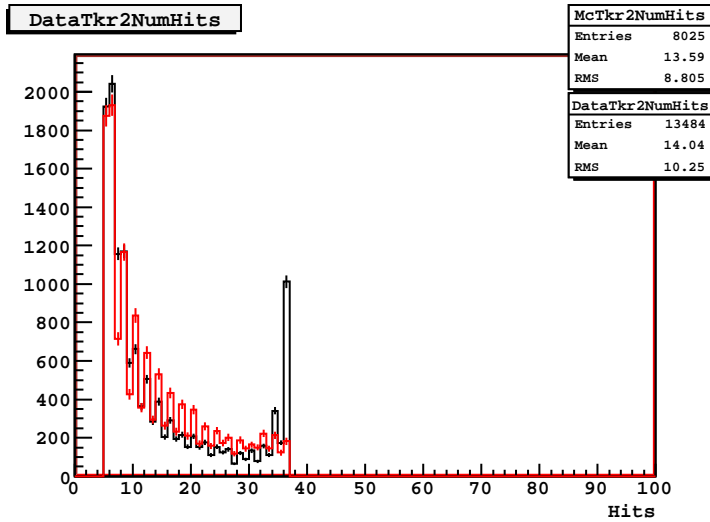
Protons 6GeV: 1423



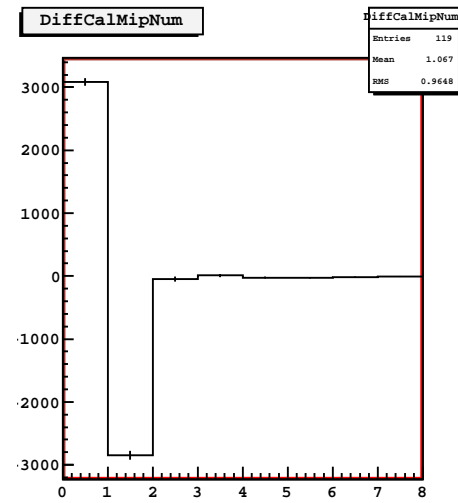
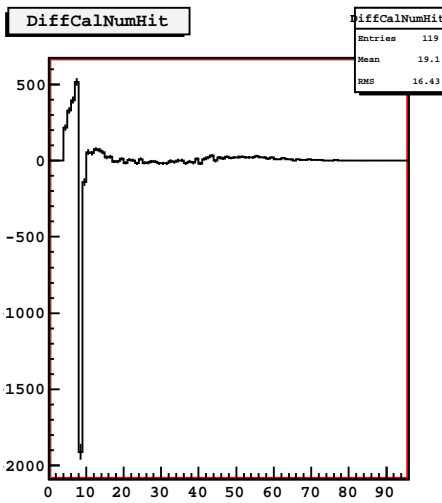
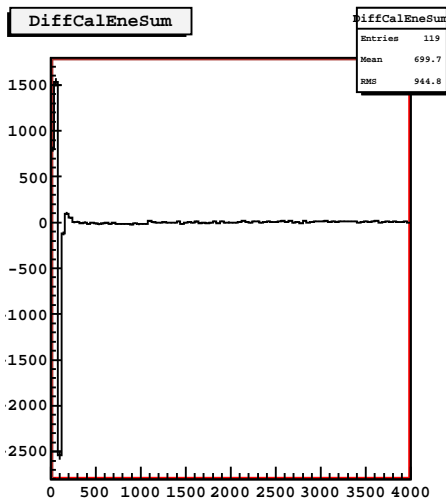
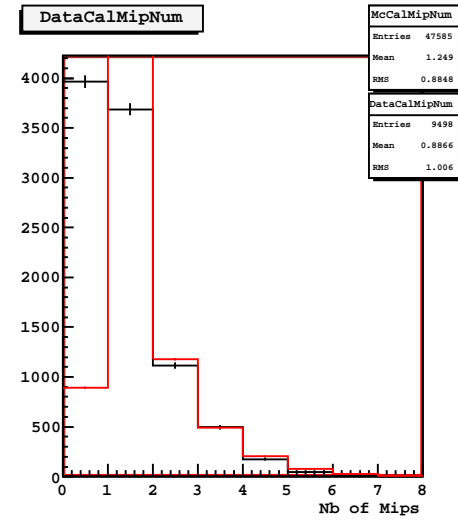
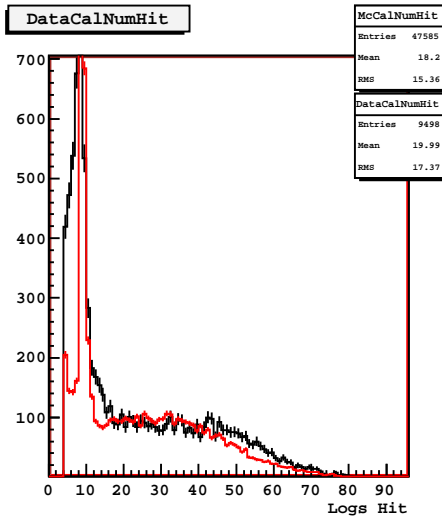
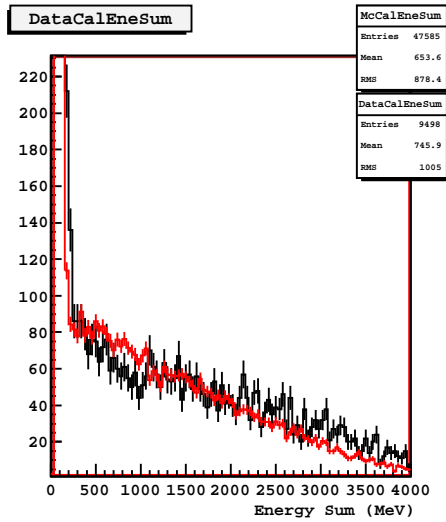
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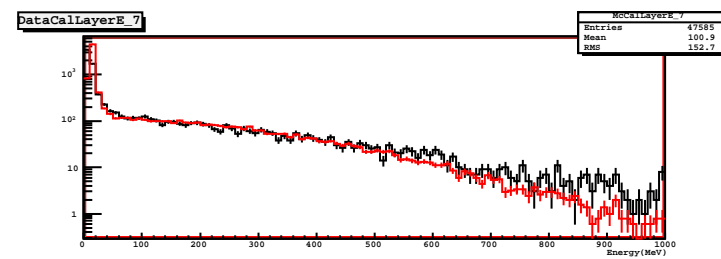
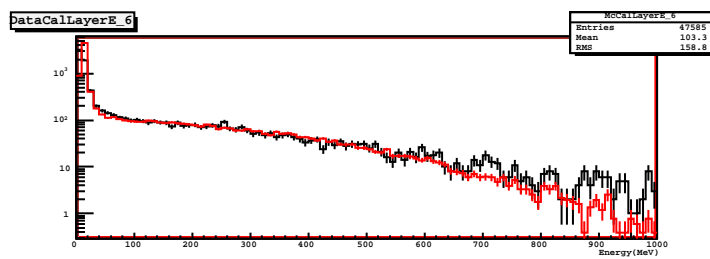
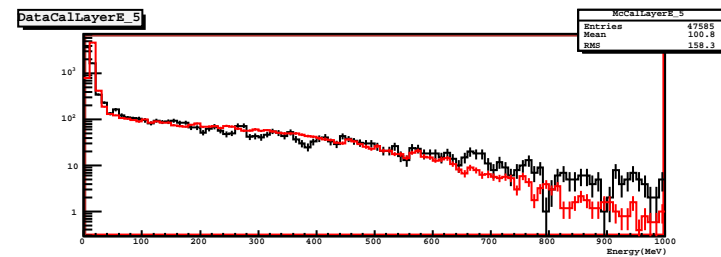
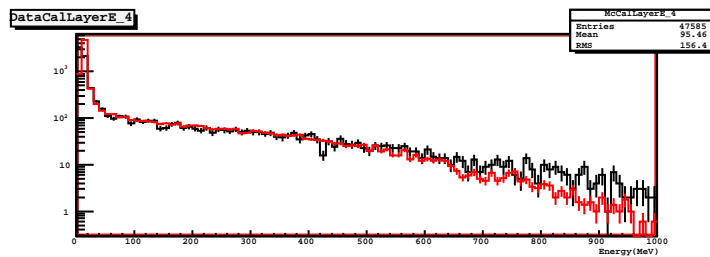
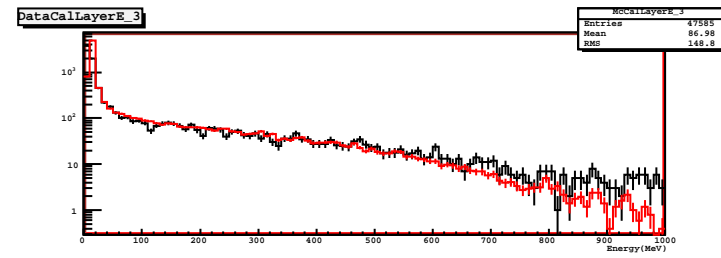
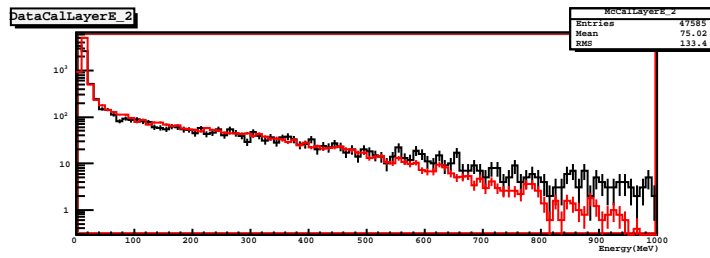
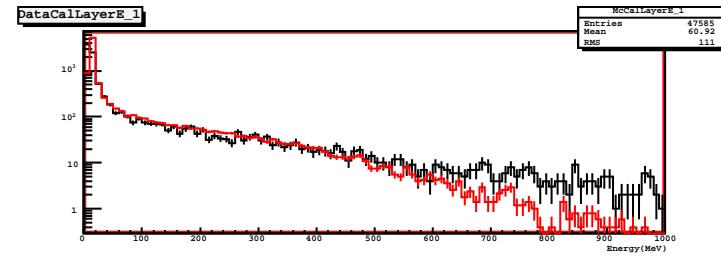
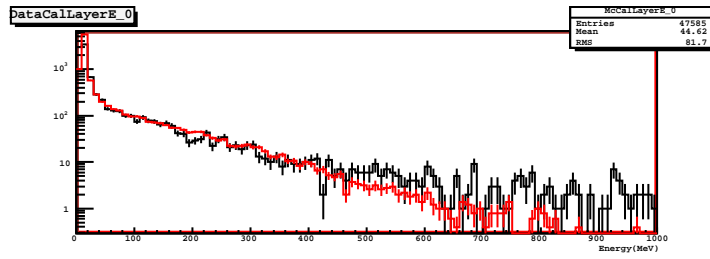
Protons 6GeV: 1423



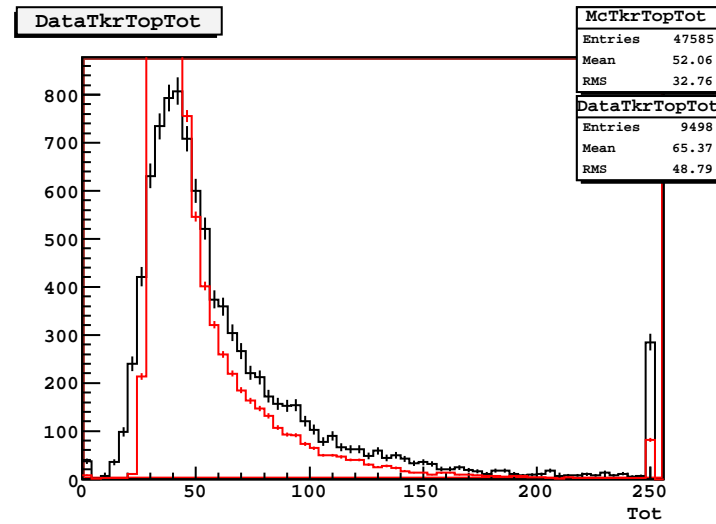
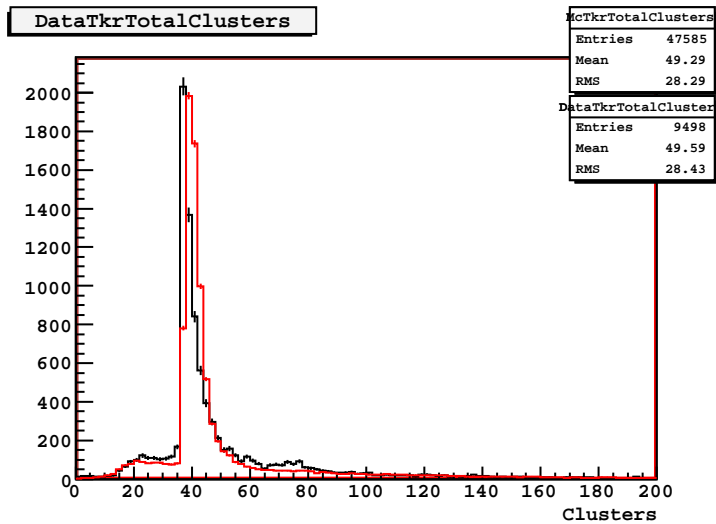
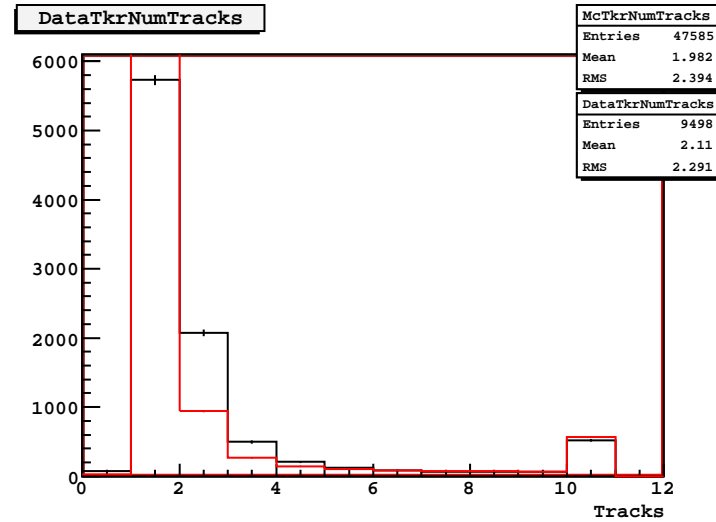
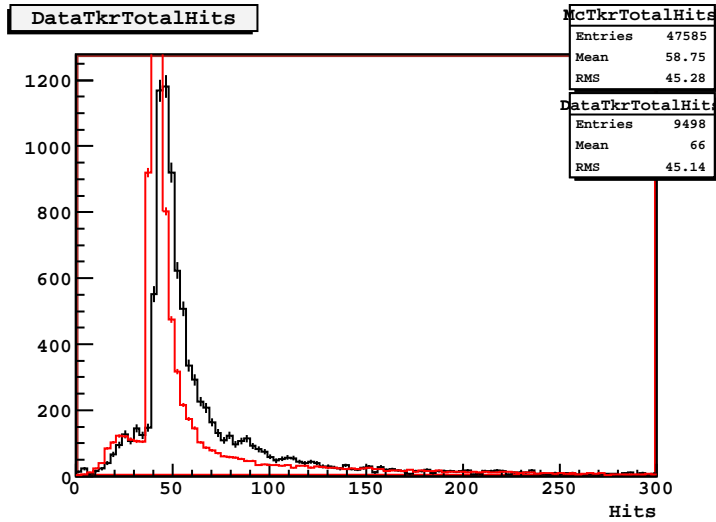
Protons 10GeV: 1419



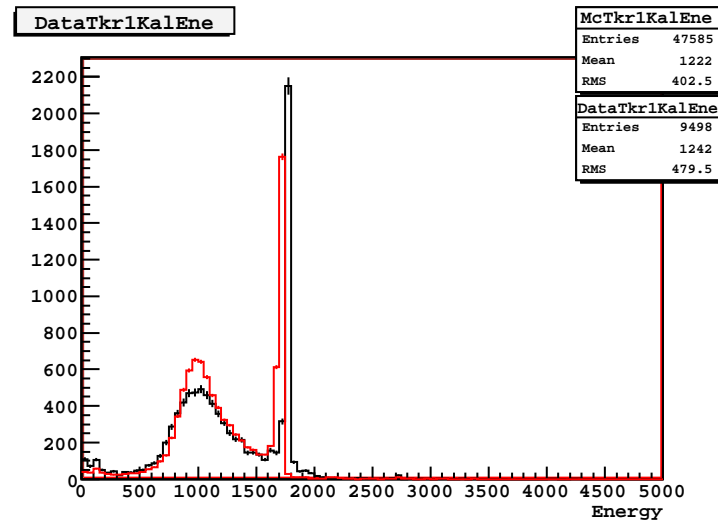
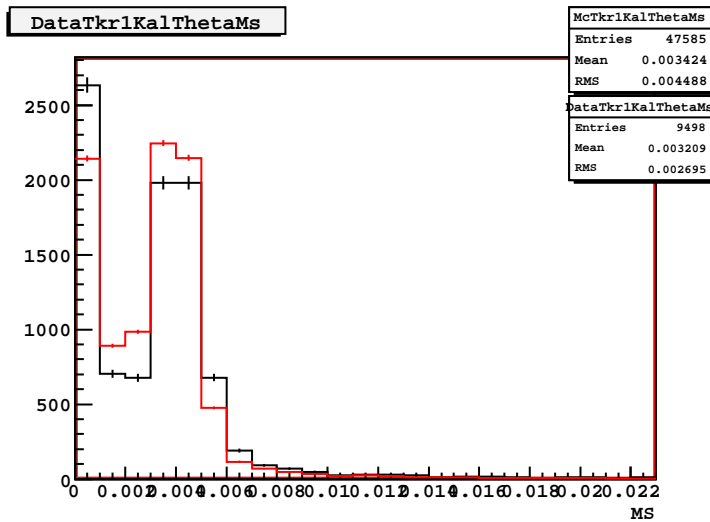
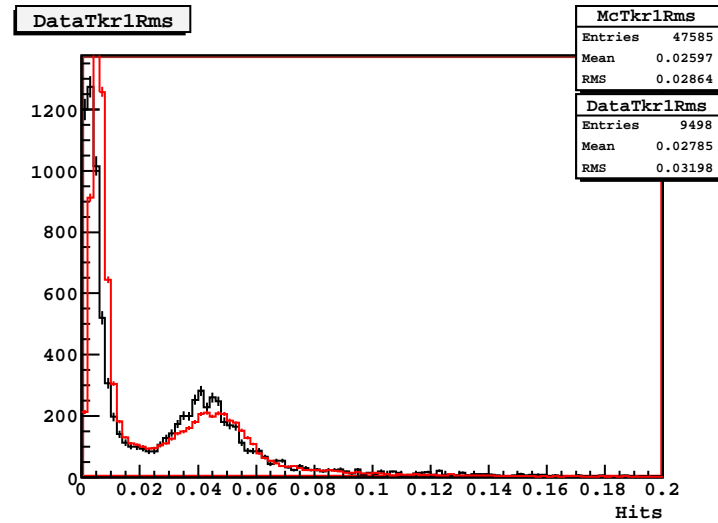
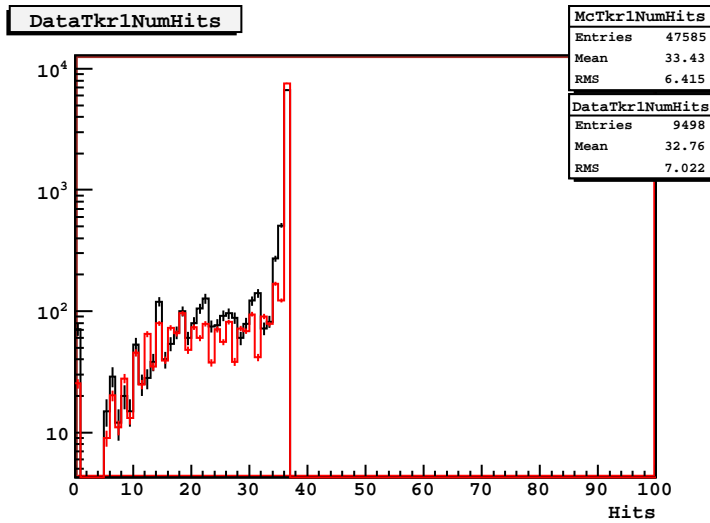
Protons 10GeV: 1419



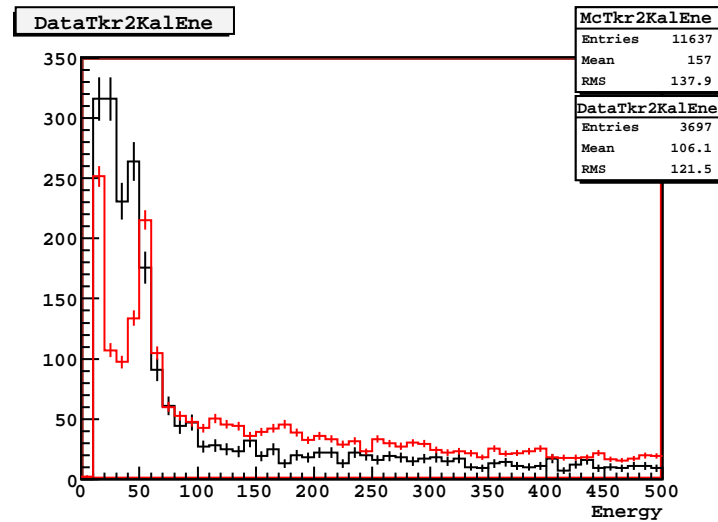
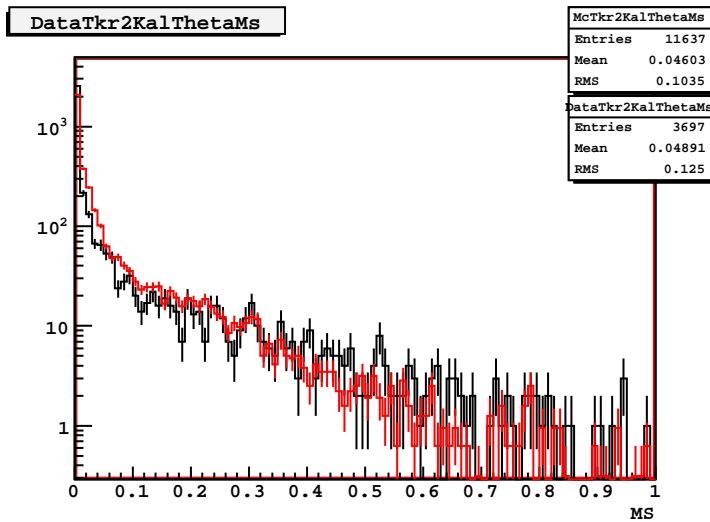
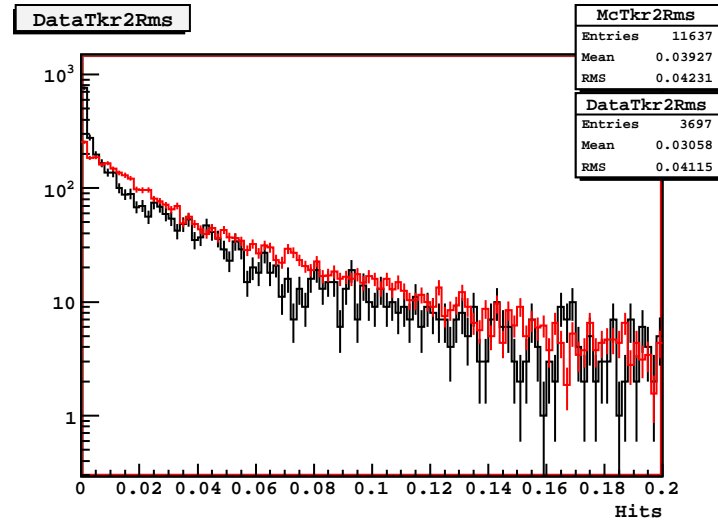
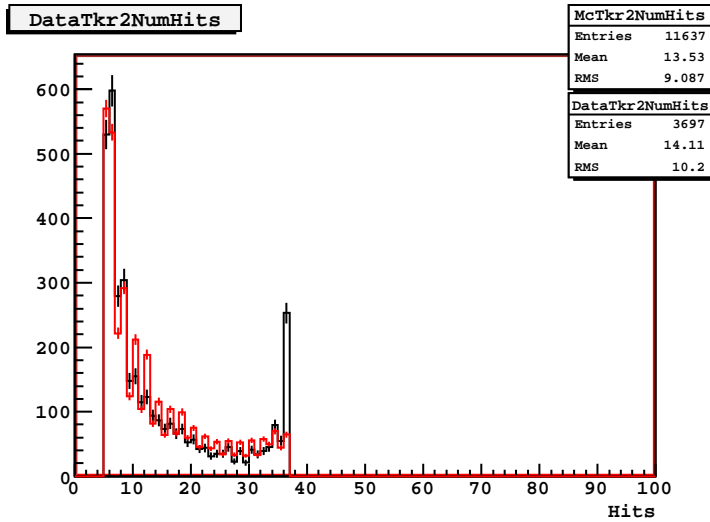
Protons 10GeV: 1419



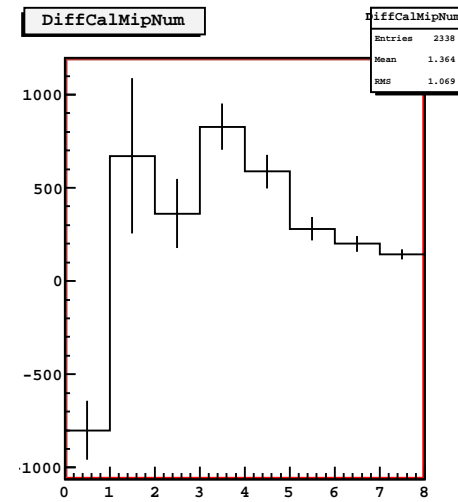
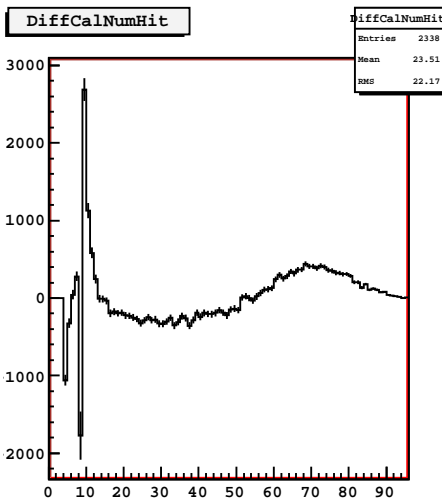
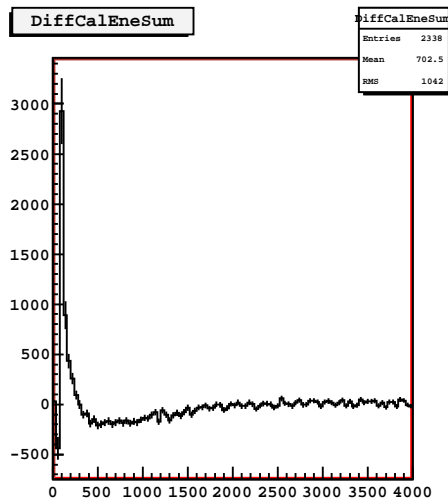
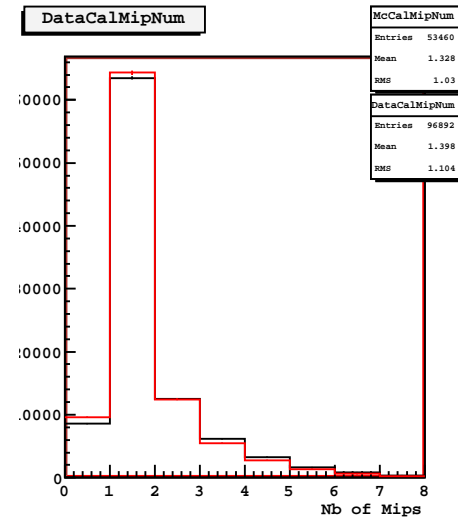
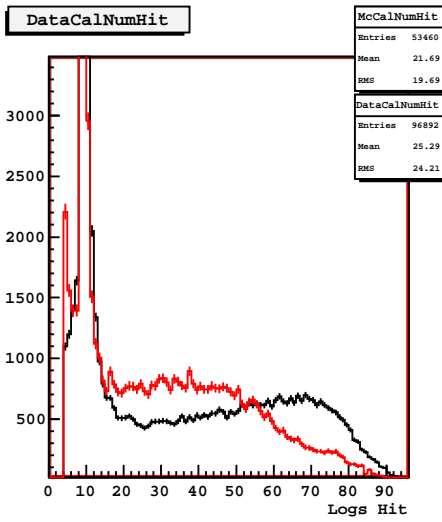
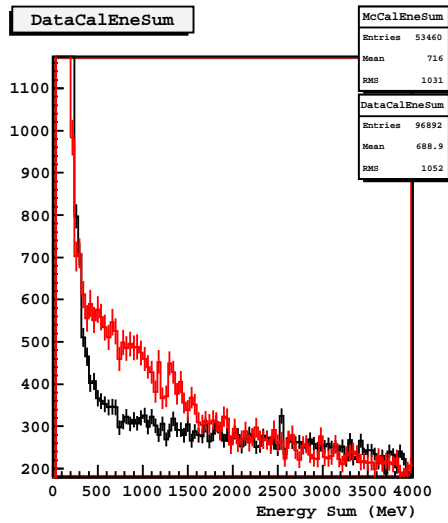
Protons 10GeV: 1419



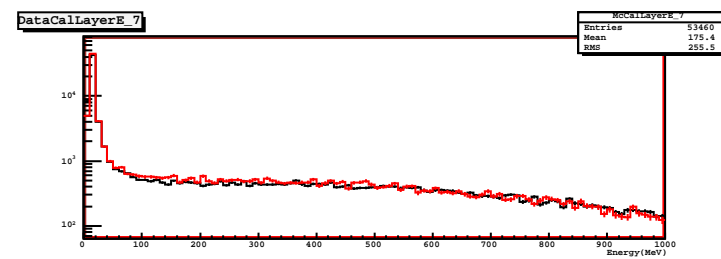
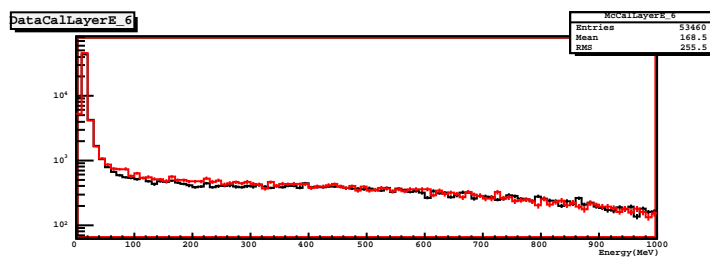
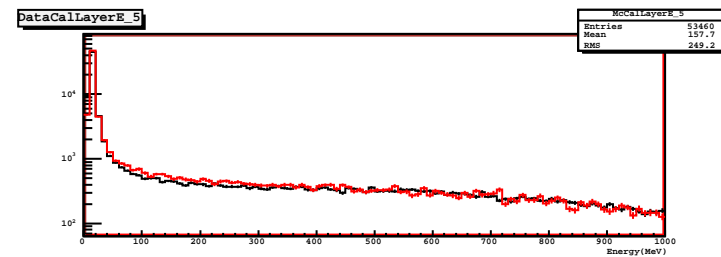
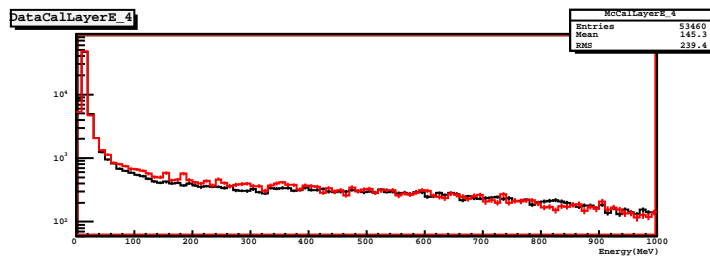
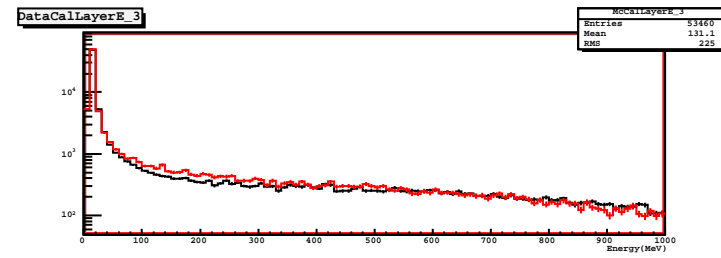
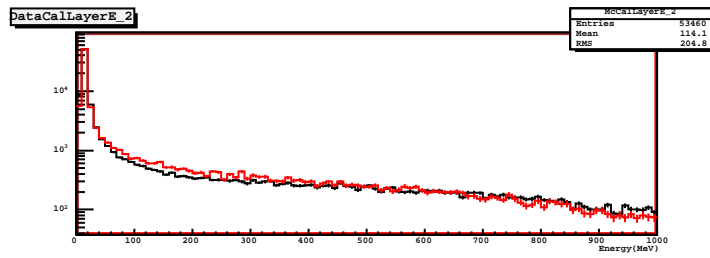
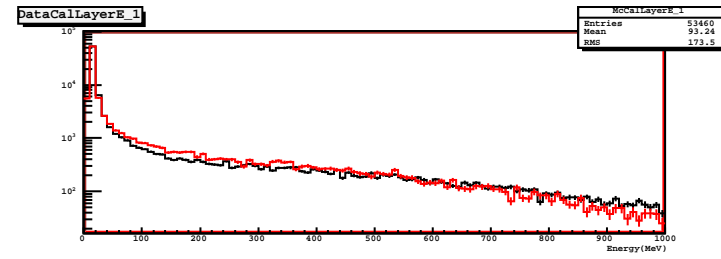
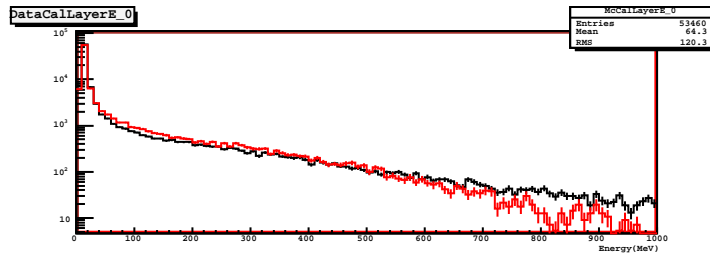
Protons 10GeV: 1419



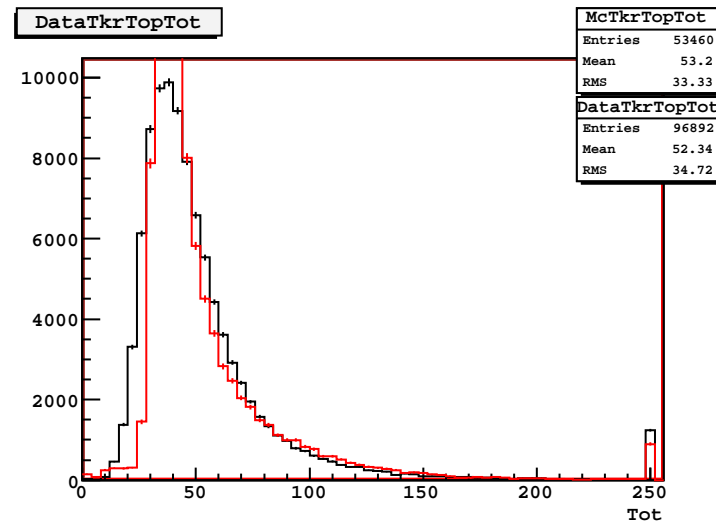
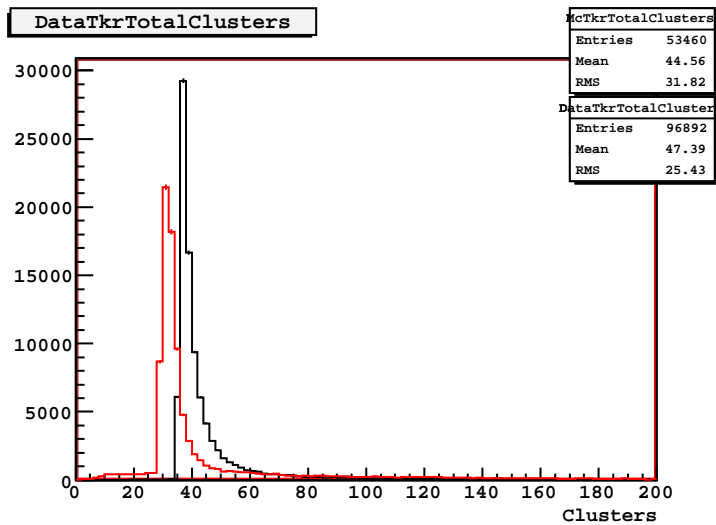
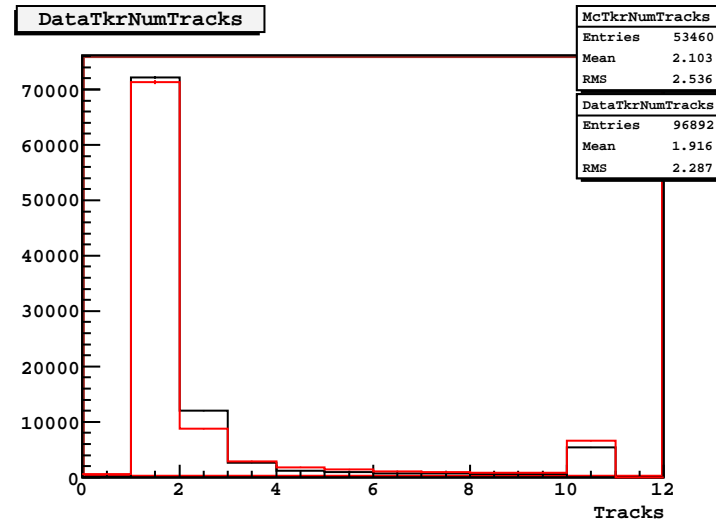
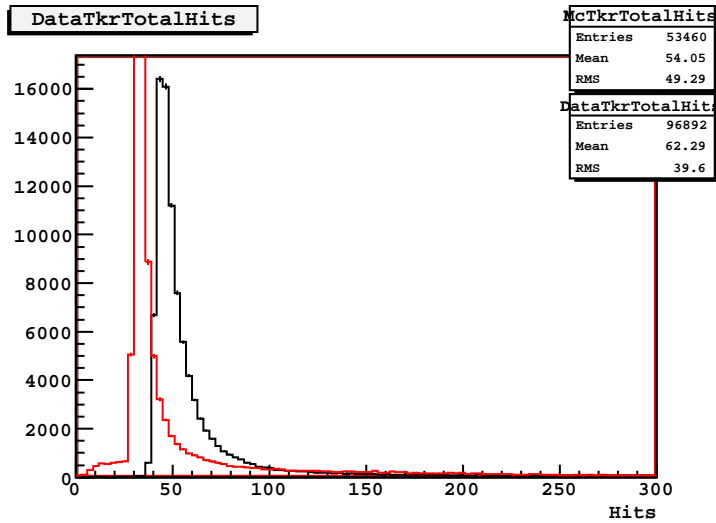
Protons 20GeV: 2237



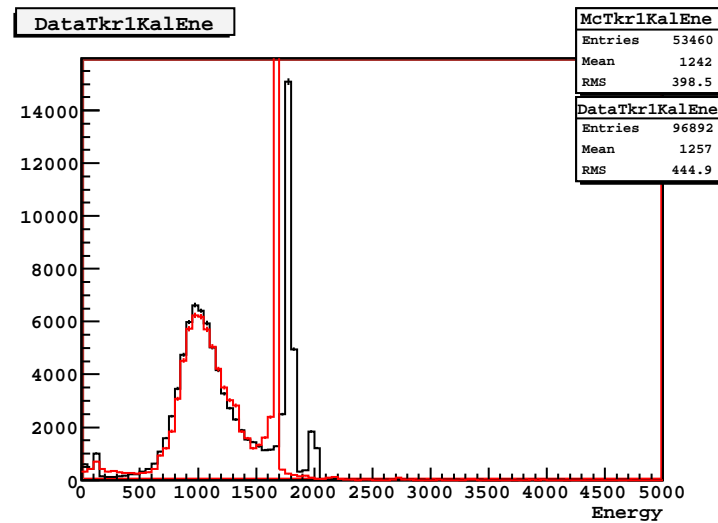
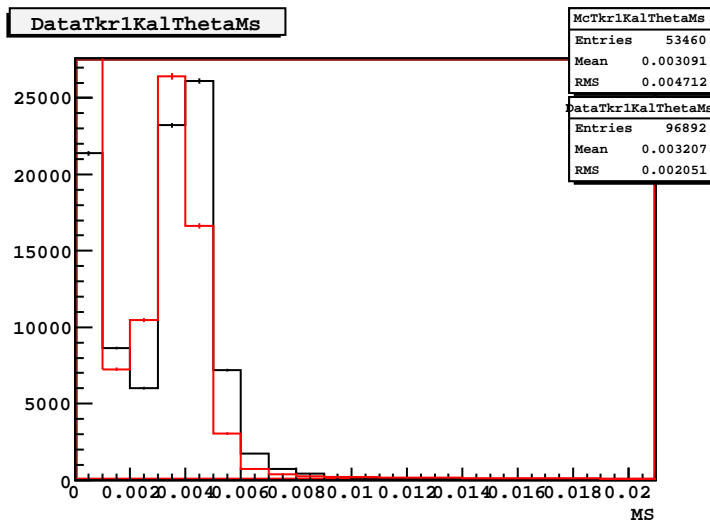
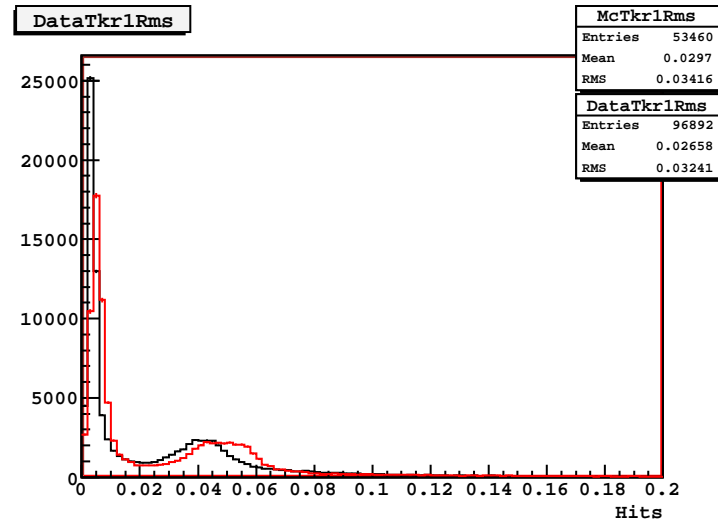
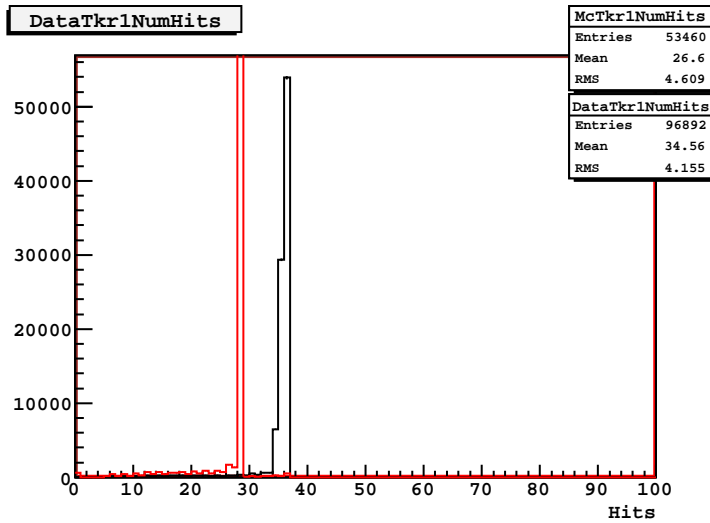
Protons 20GeV: 2237



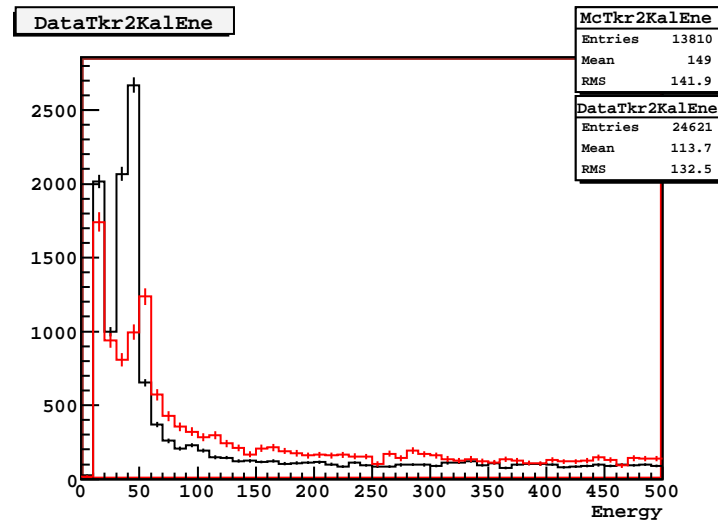
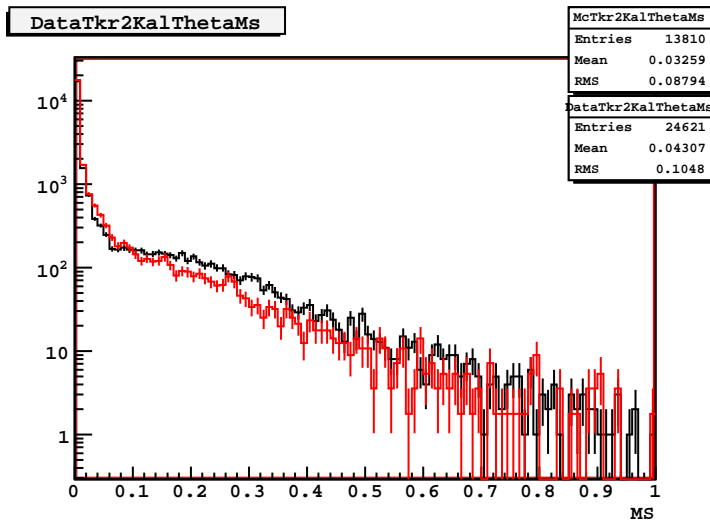
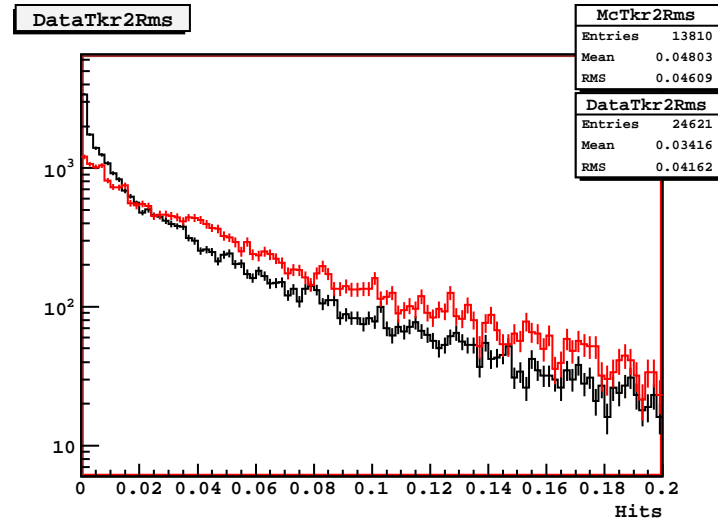
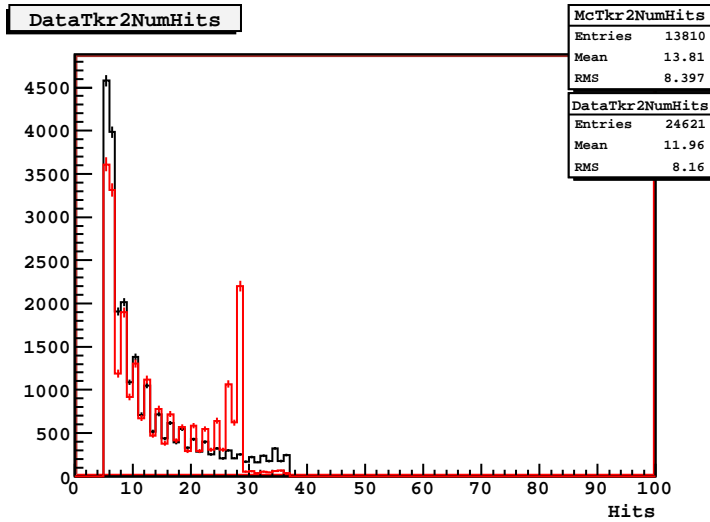
Protons 20GeV: 2237



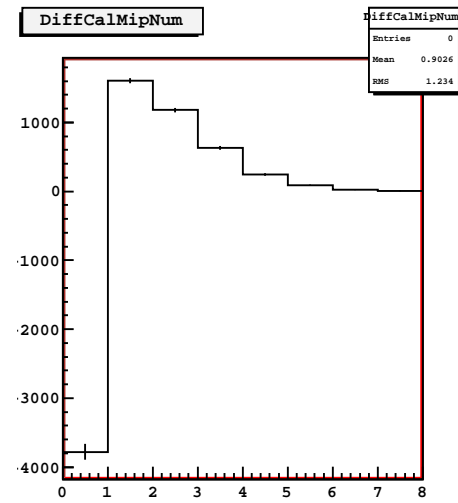
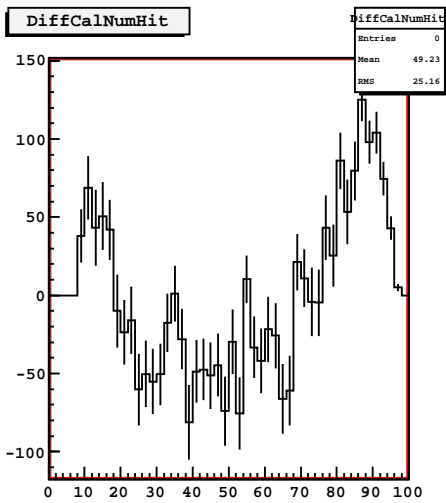
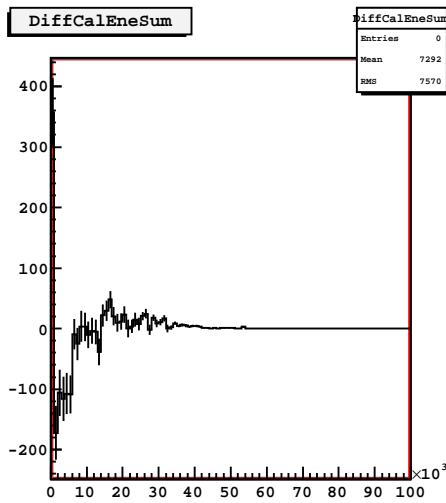
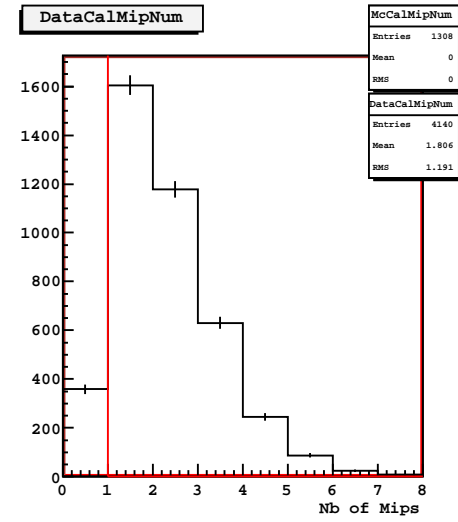
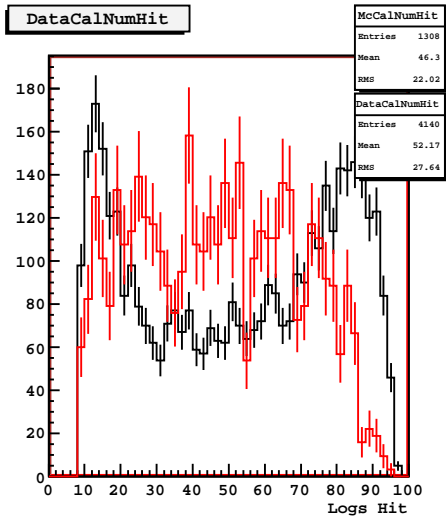
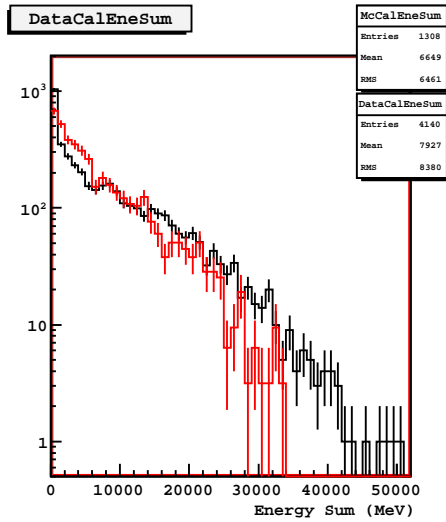
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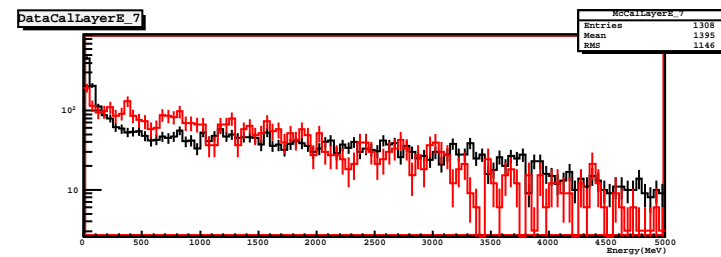
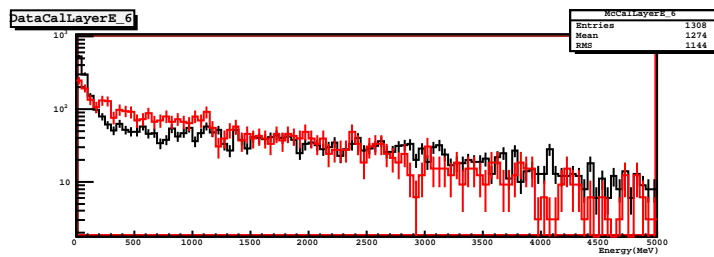
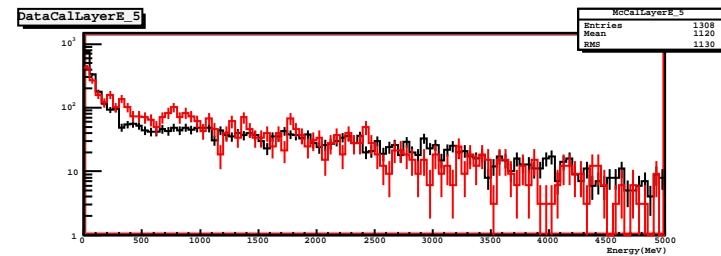
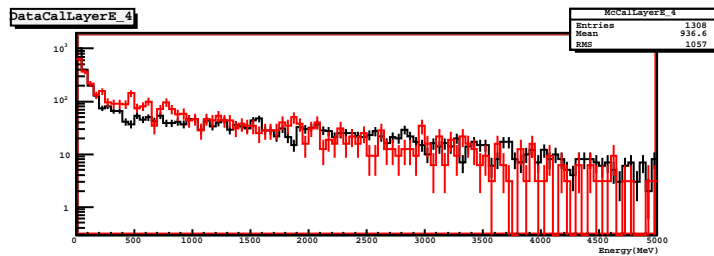
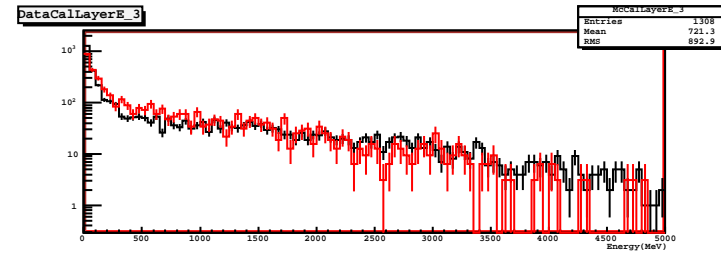
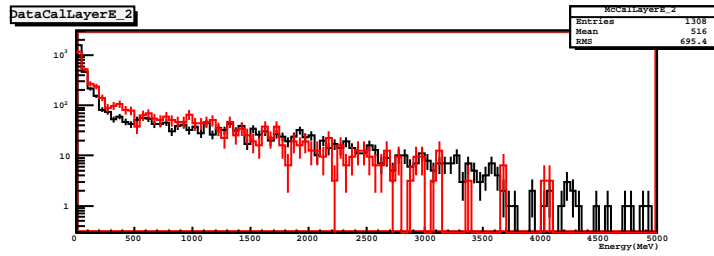
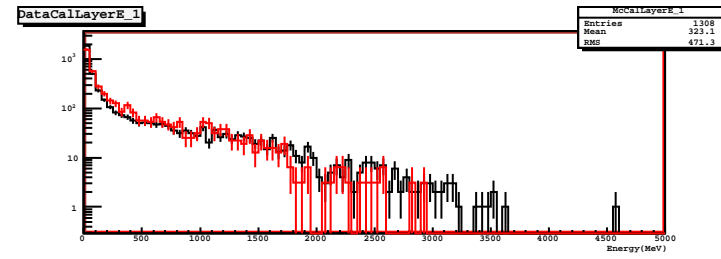
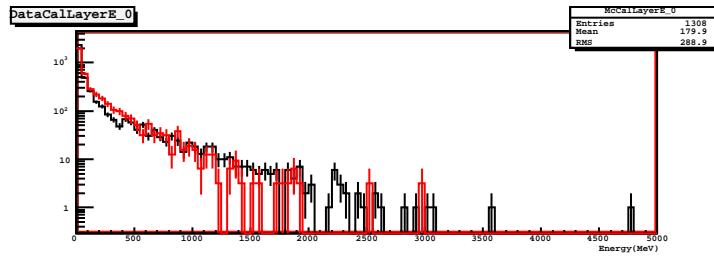
Protons 20GeV: 2237



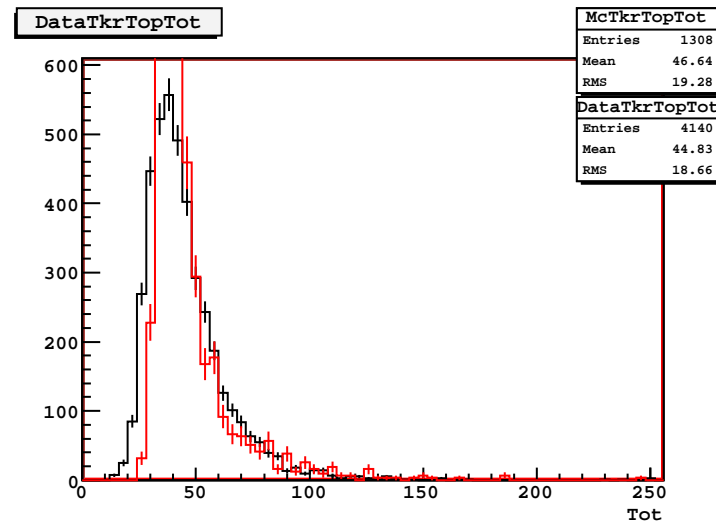
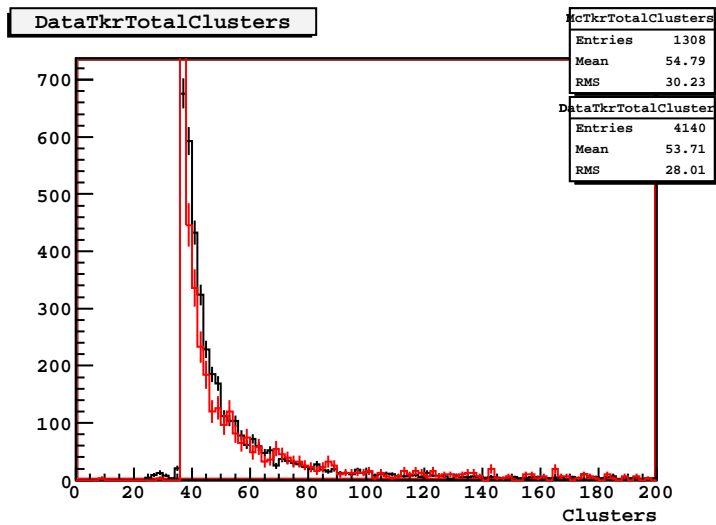
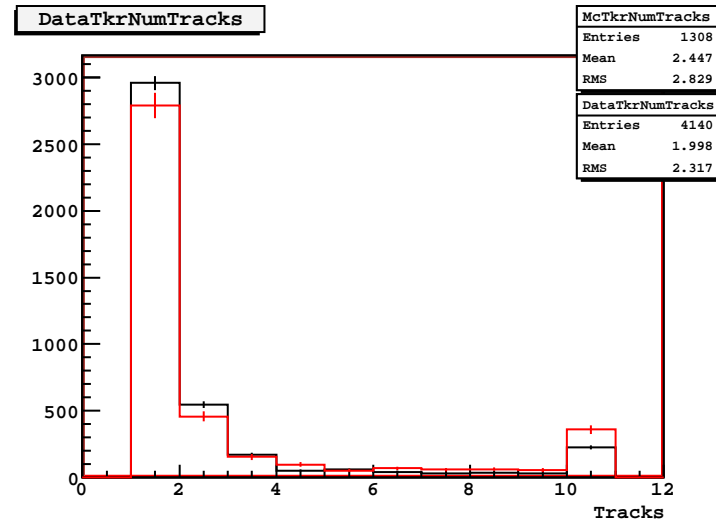
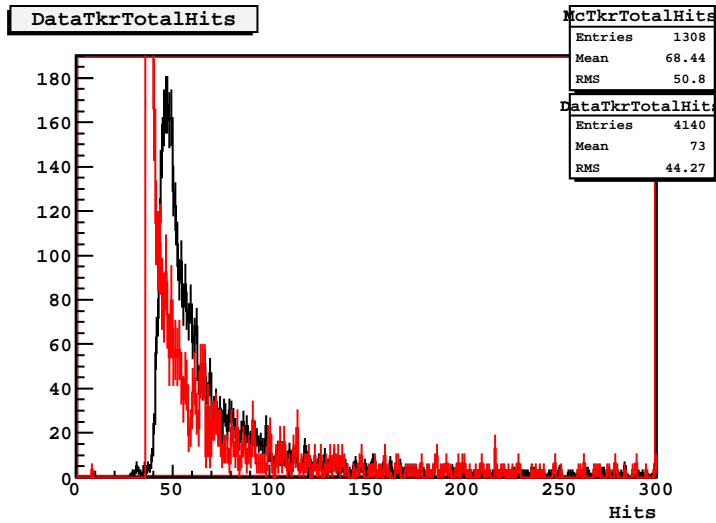
Protons 100GeV: 2363



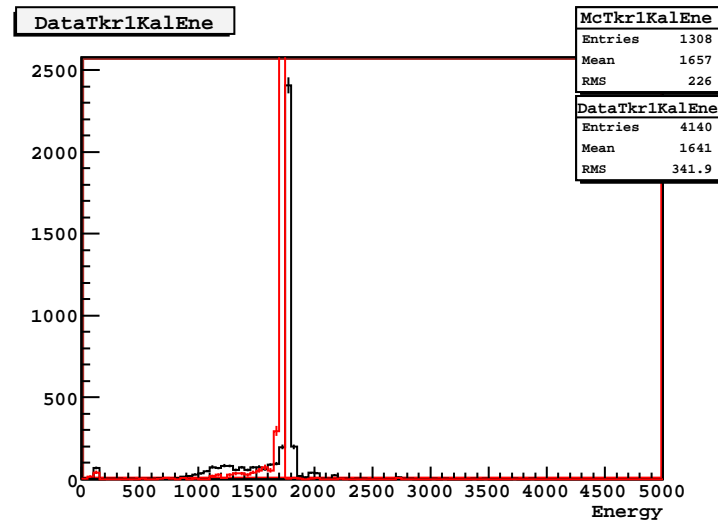
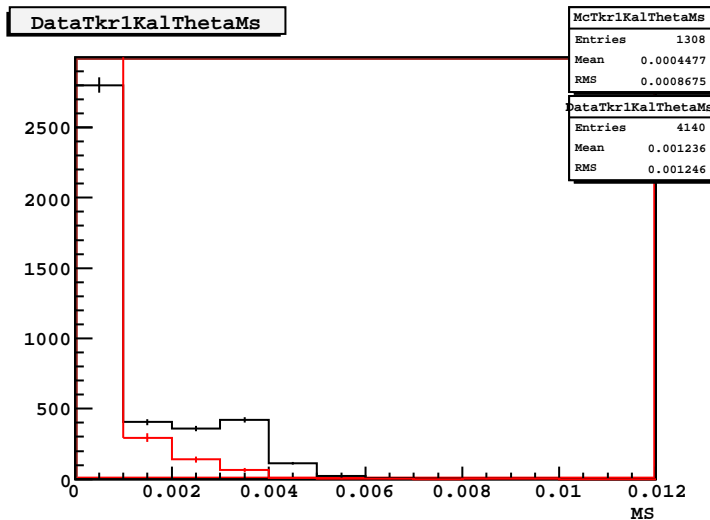
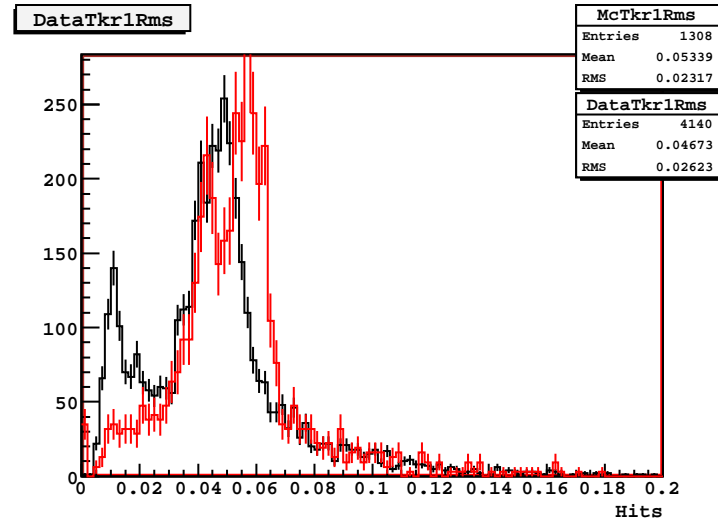
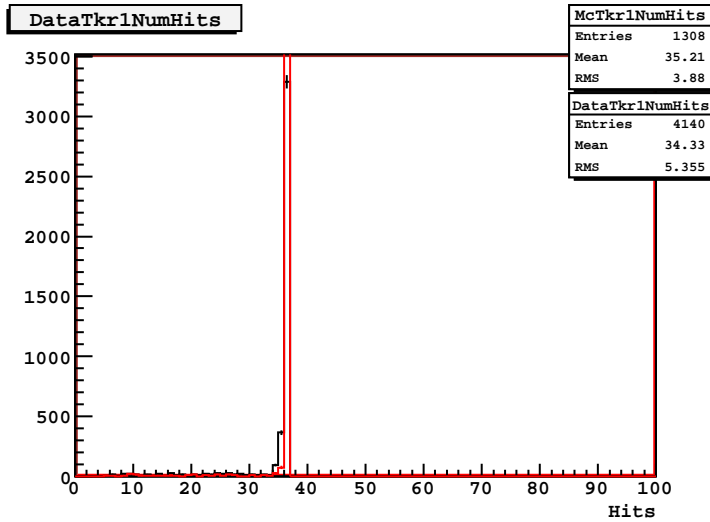
Protons 100GeV: 2363



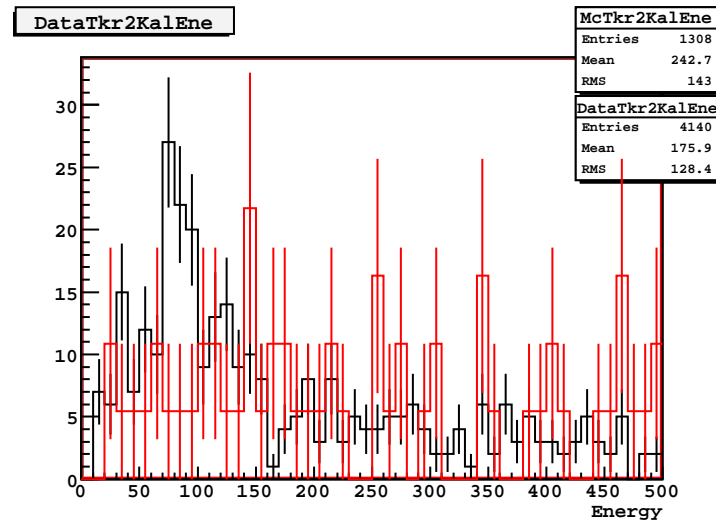
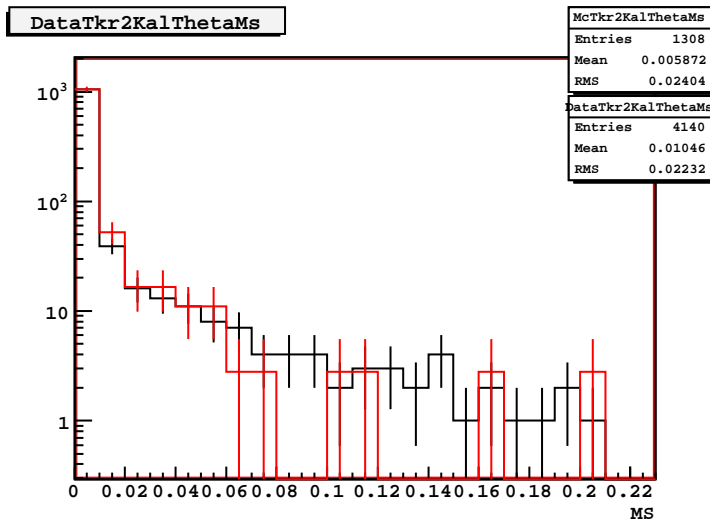
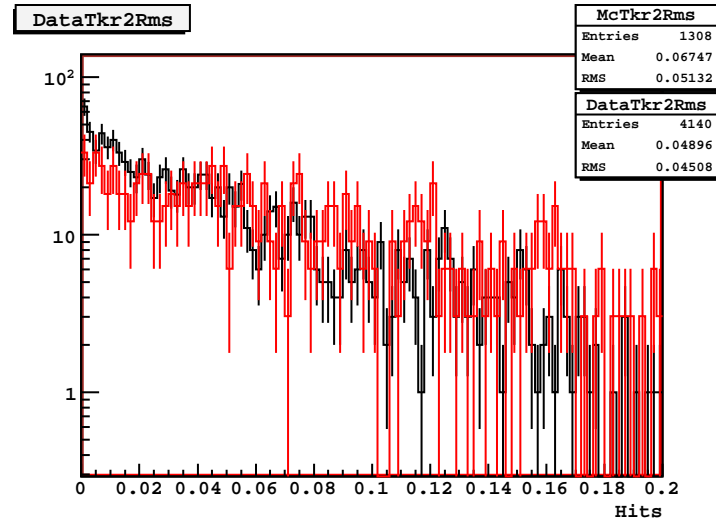
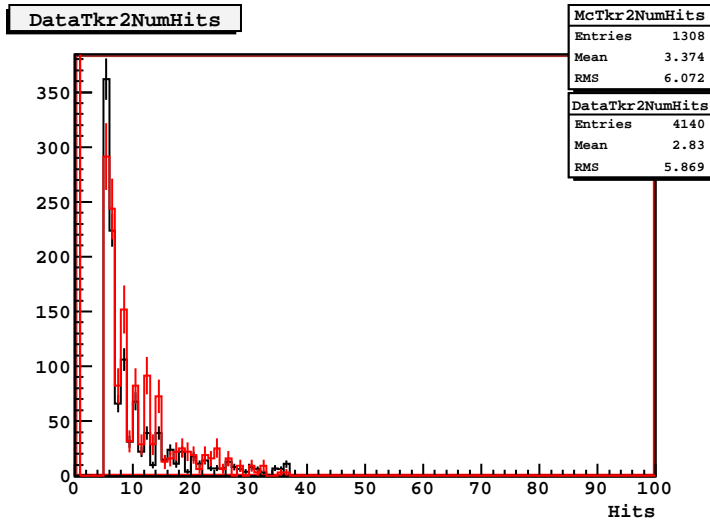
Protons 100GeV: 2363



Protons 100GeV: 2363



Protons 100GeV: 2363



conclusions and issues

- BeamSpot tuning is a key point as always
- Implement trigger in SPS would help
- many MC with different configurations to be run: 100k events
- Looks quite good now under 20GeV, more work to be done at higher energy
- what when data will have been reprocessed !?