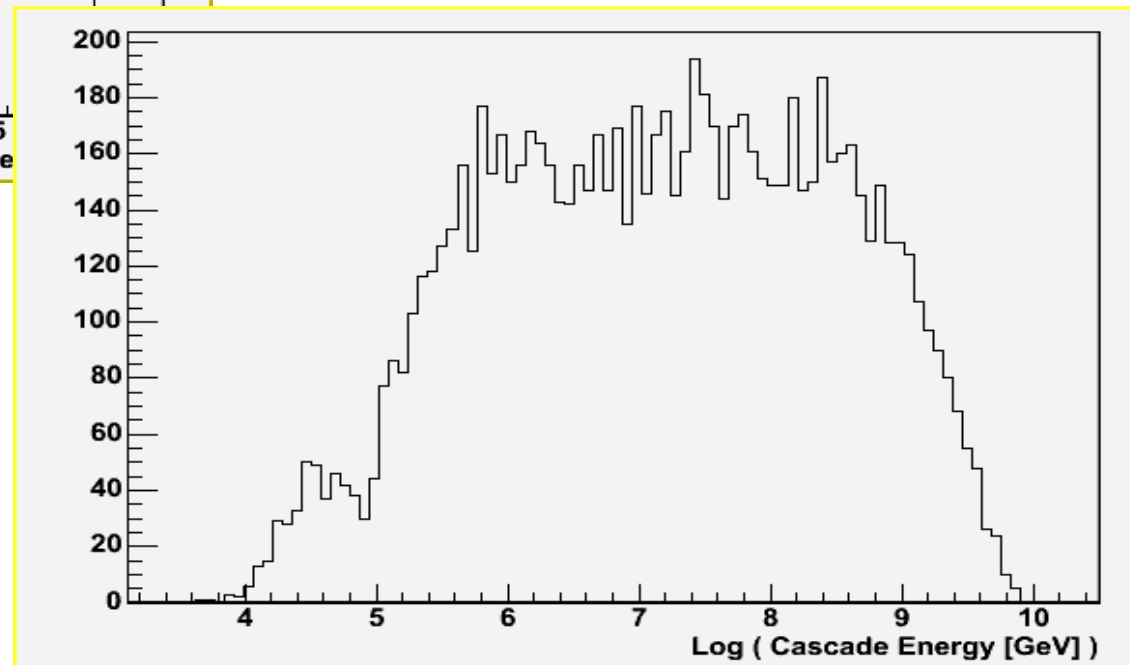
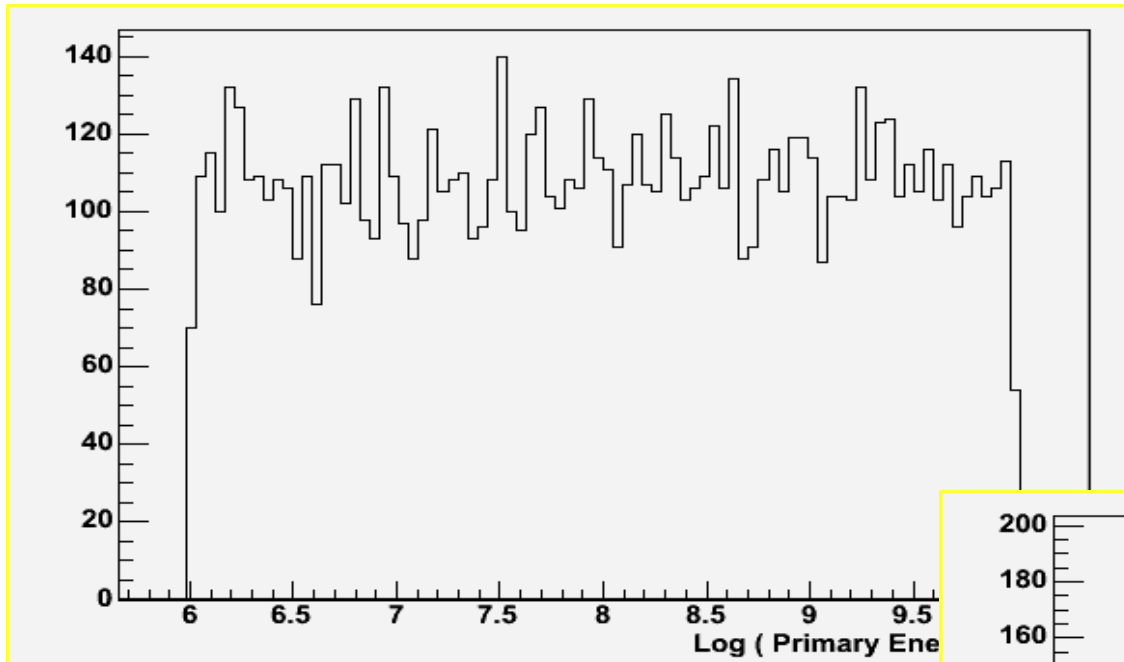


The first MC data production

Aya - Dec 8th/9th, 2005

Juliet Events

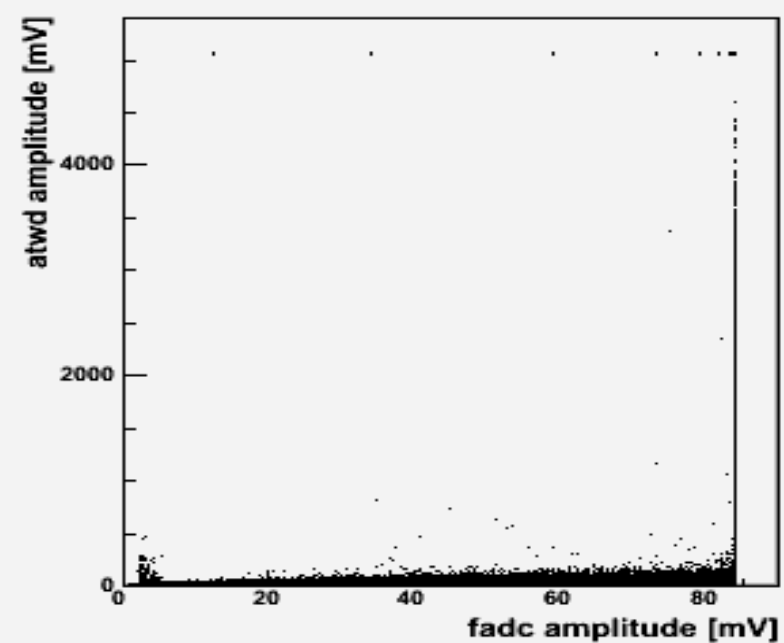
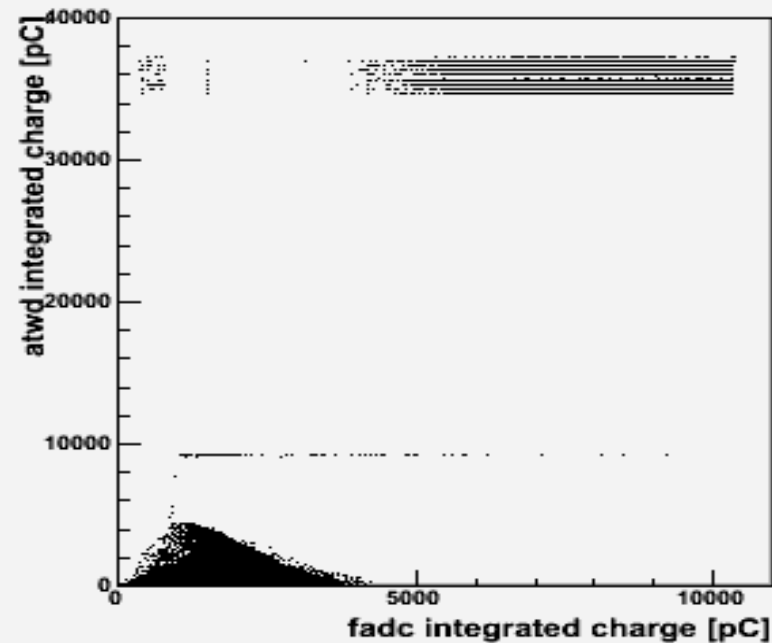
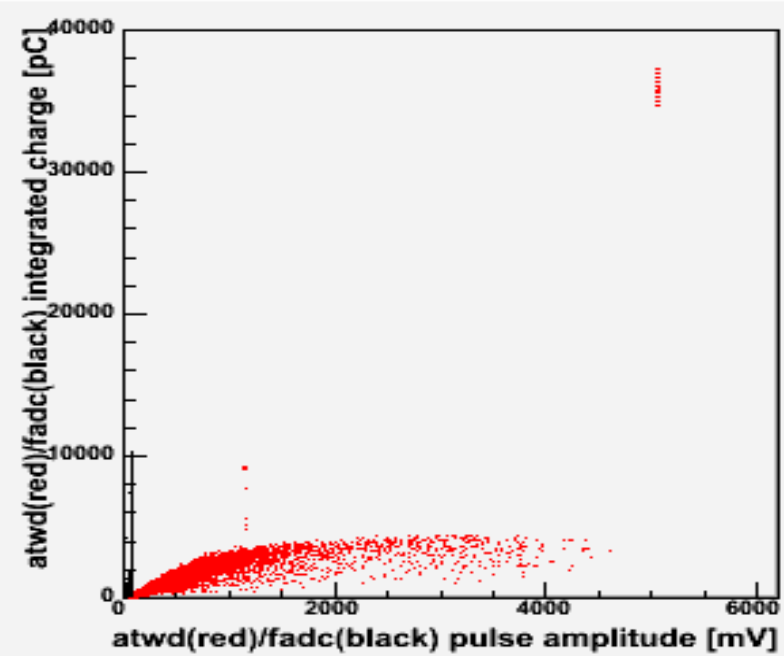
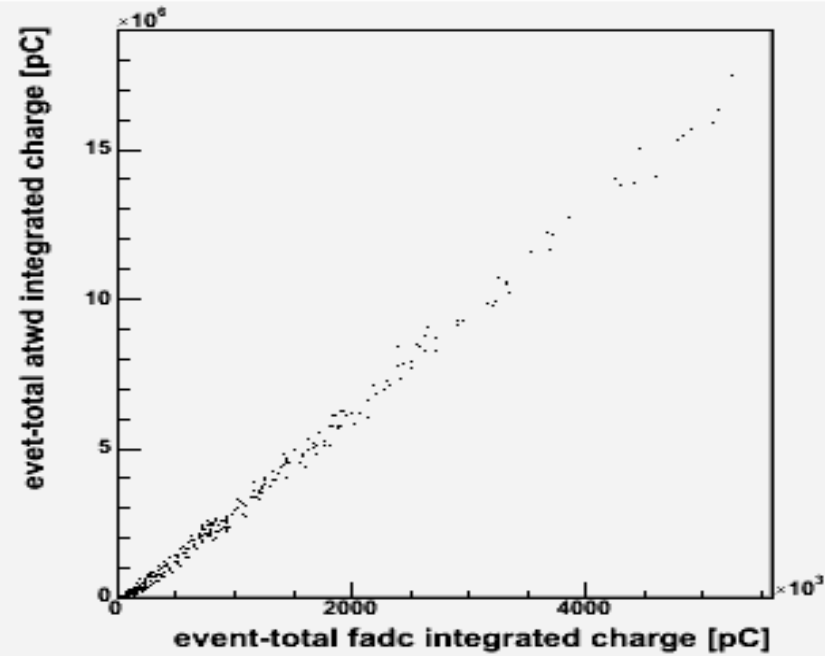
9258 events, $\log(E \text{ [GeV]})$ from 6 to 10 created by Keiichi
on npx cluster



Basic checks 1

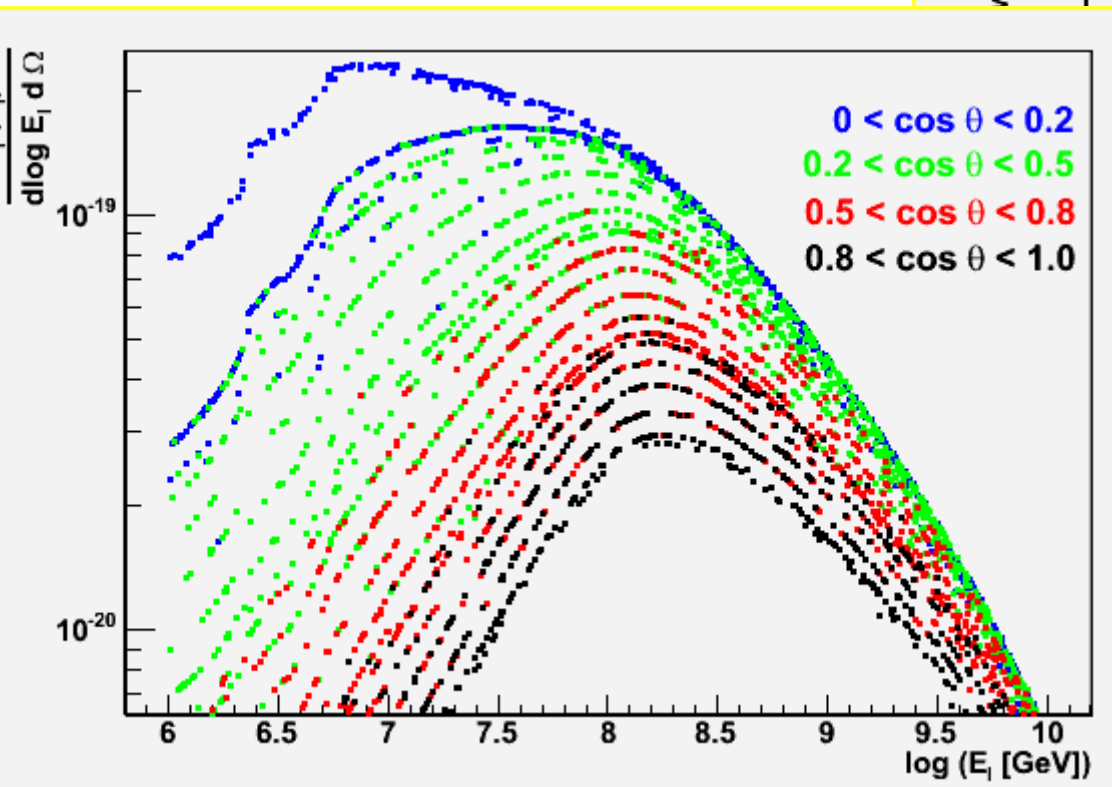
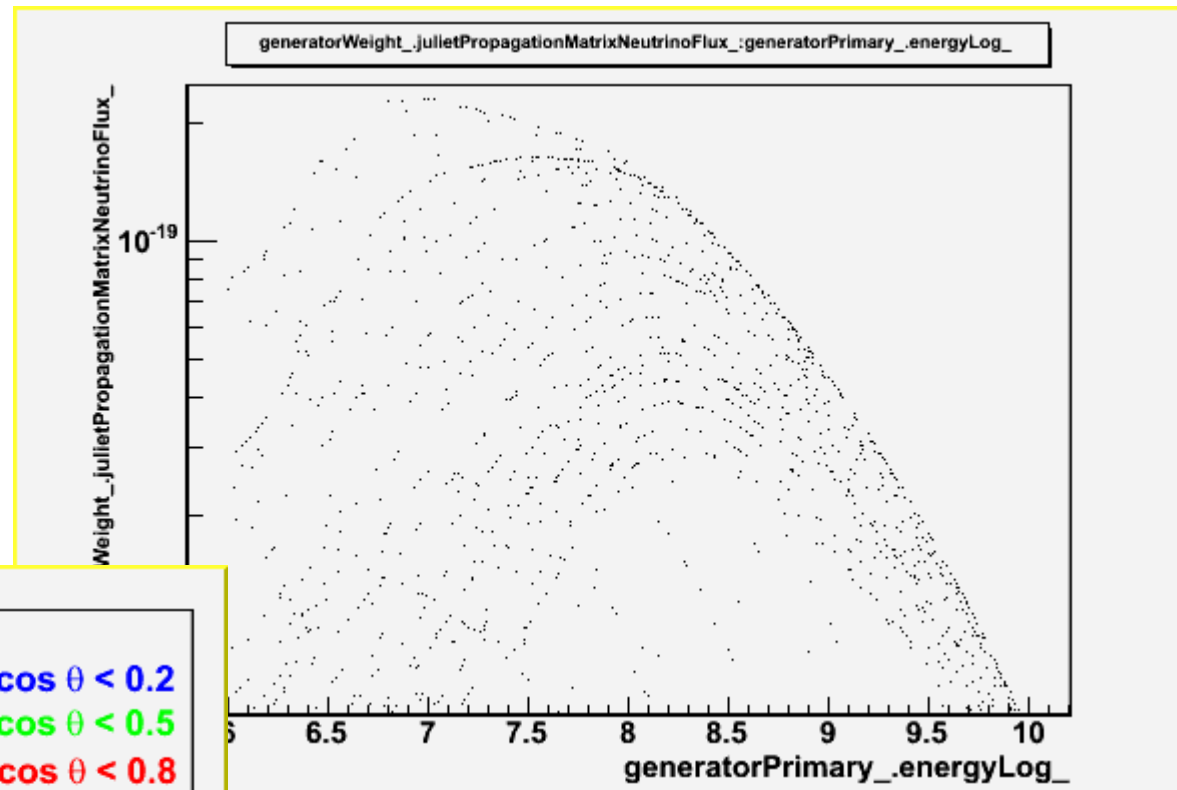


Basic checks 2



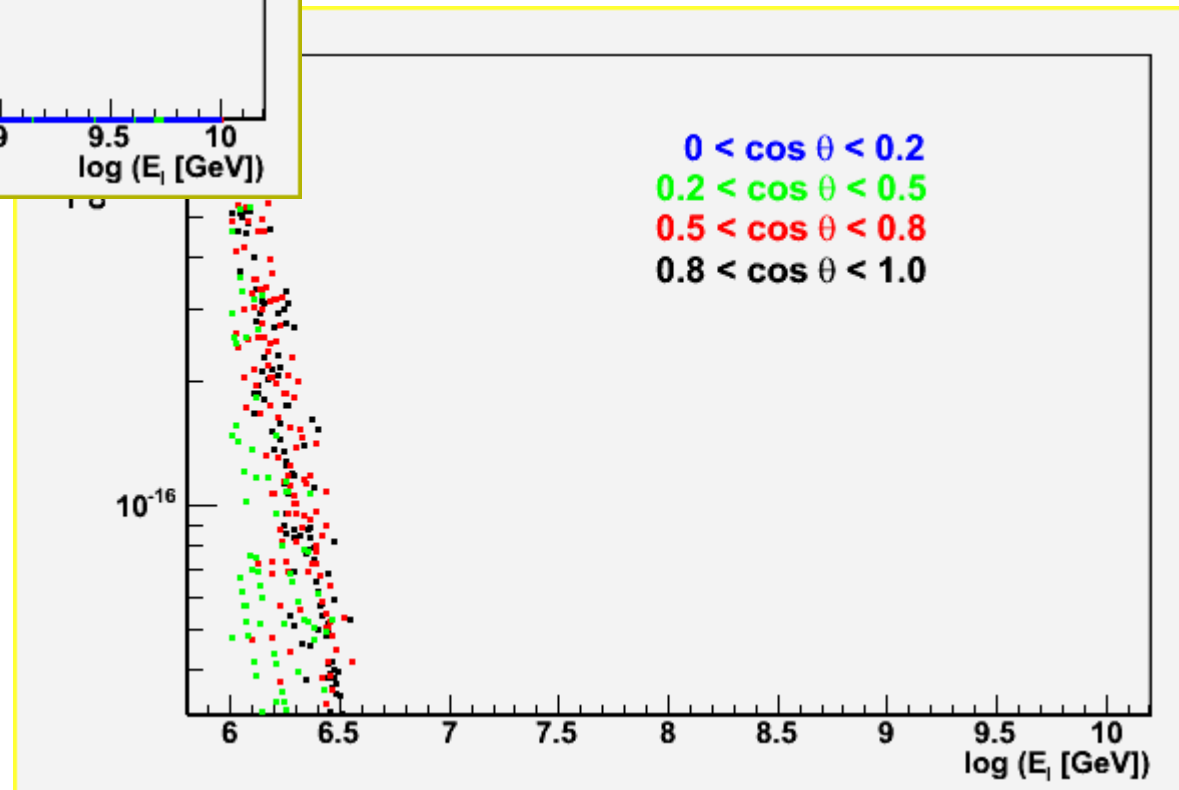
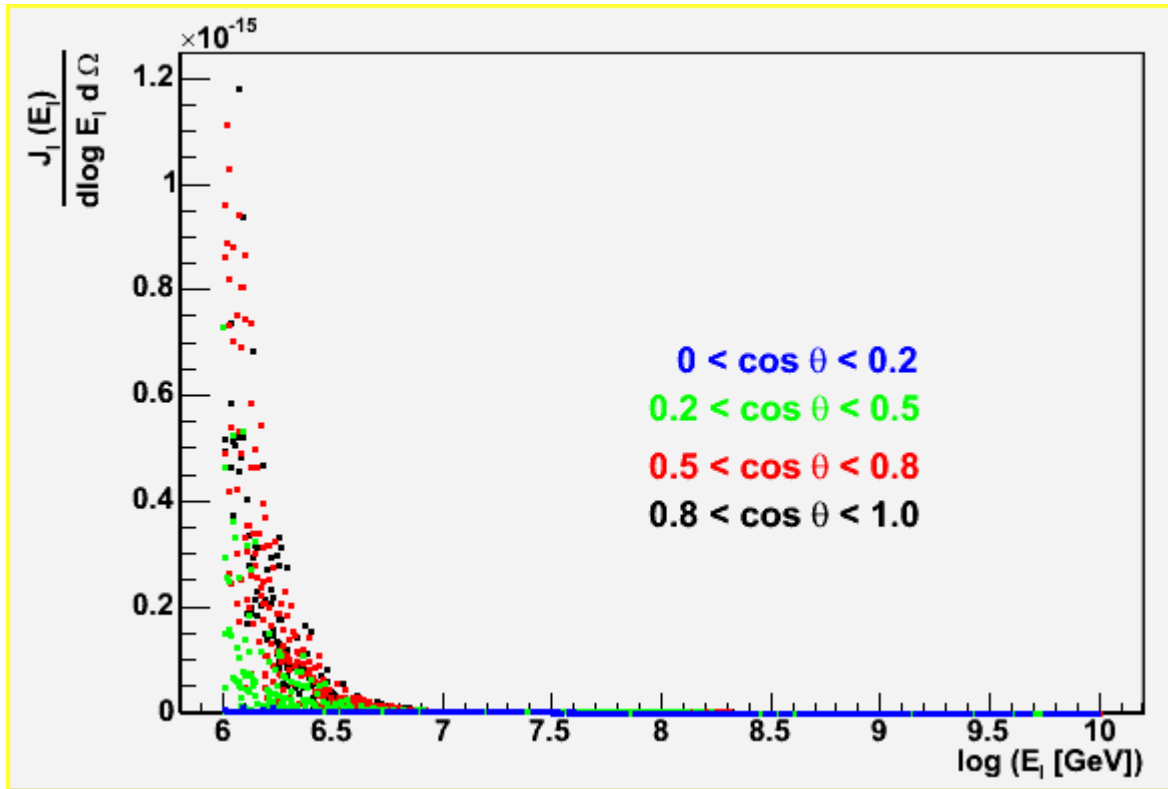
Propagation Matrix Weights

full

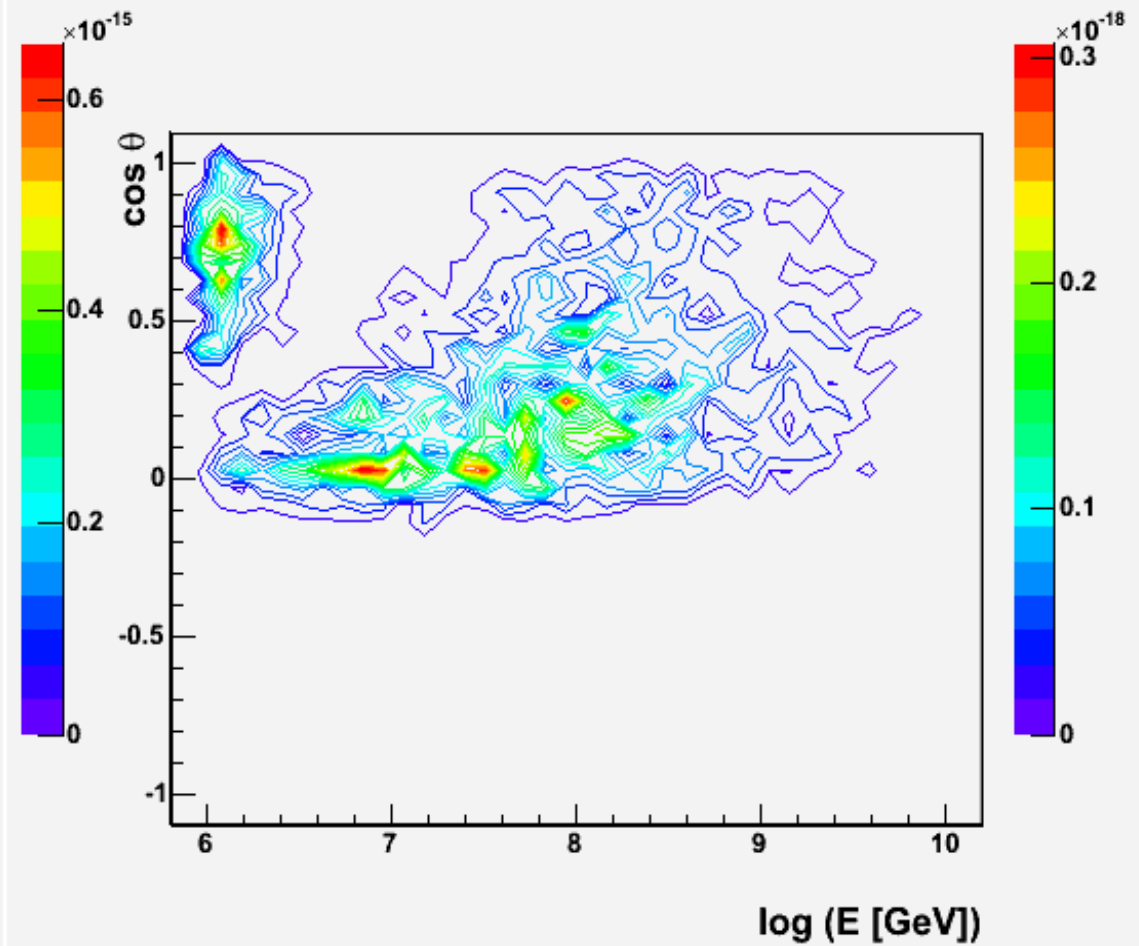
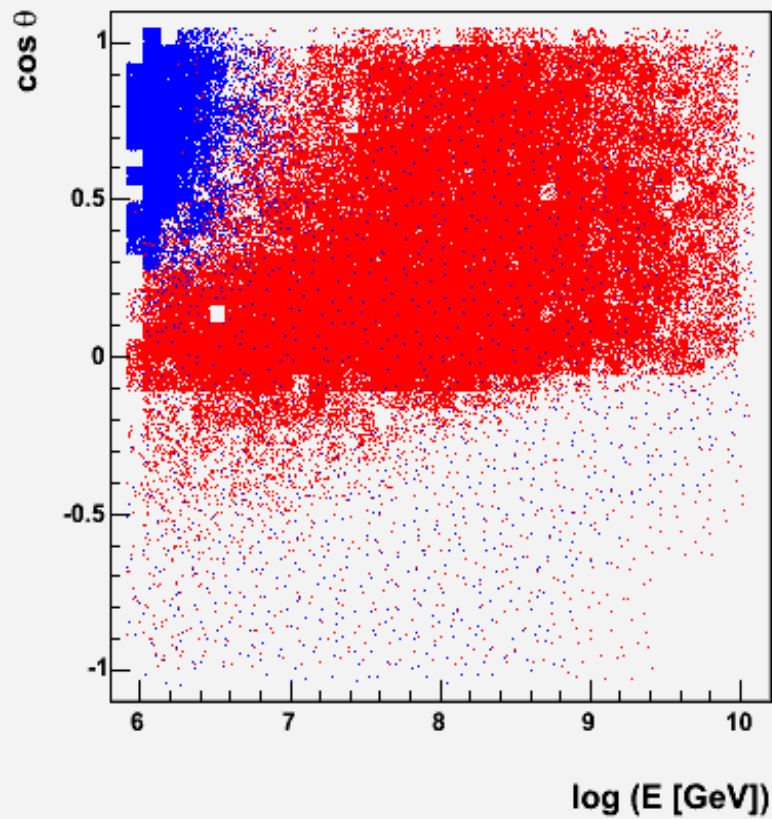


down-going

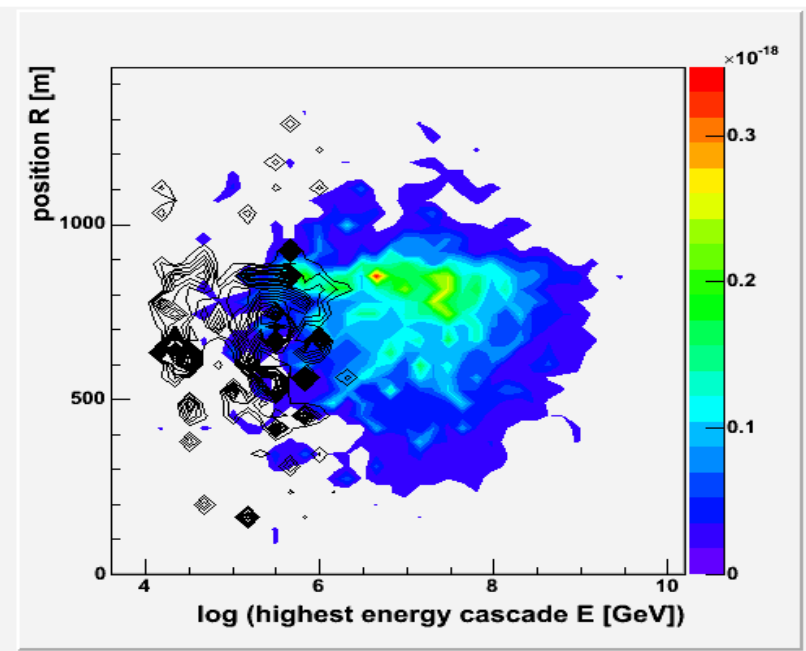
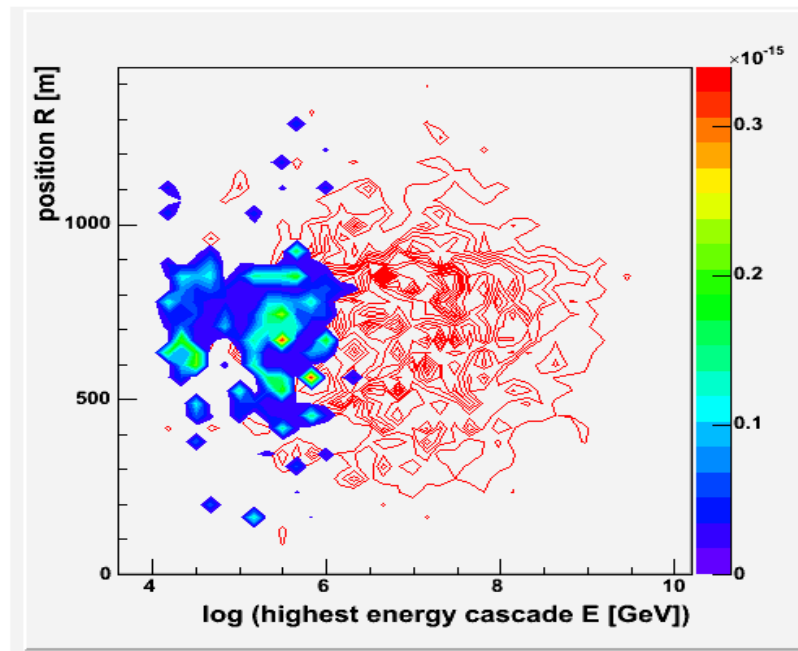
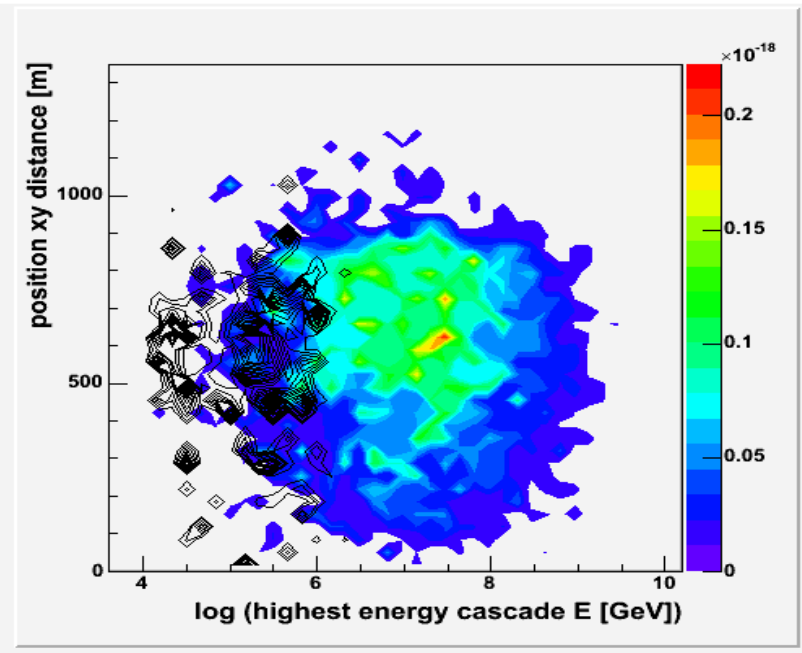
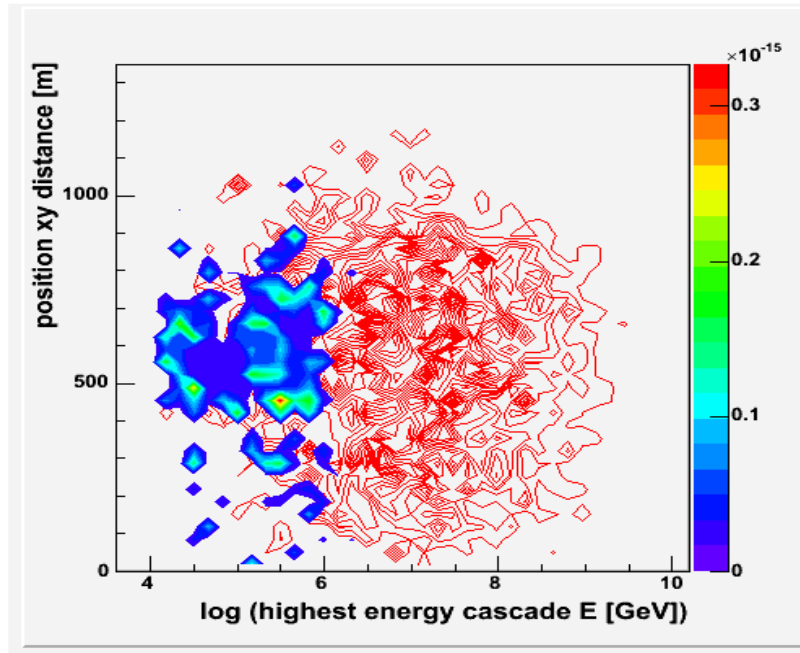
Atmospheric Muon Weight



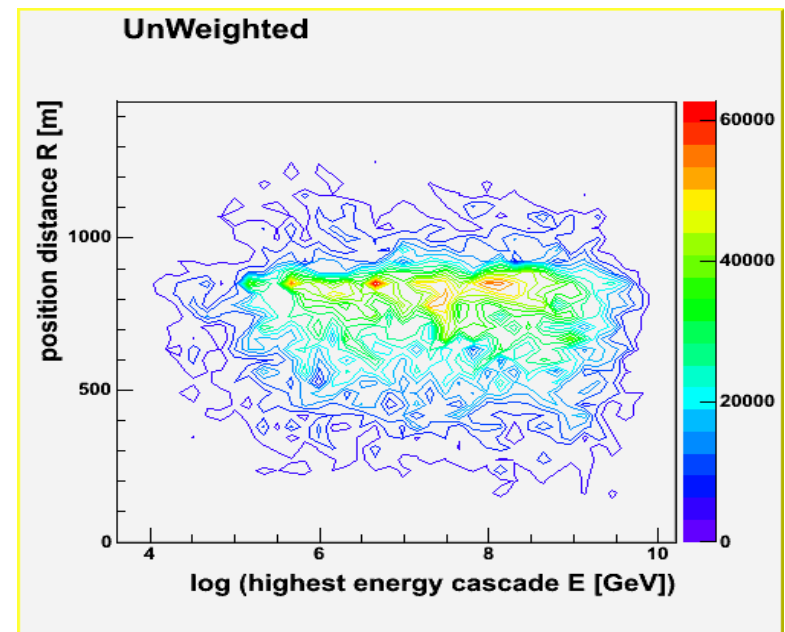
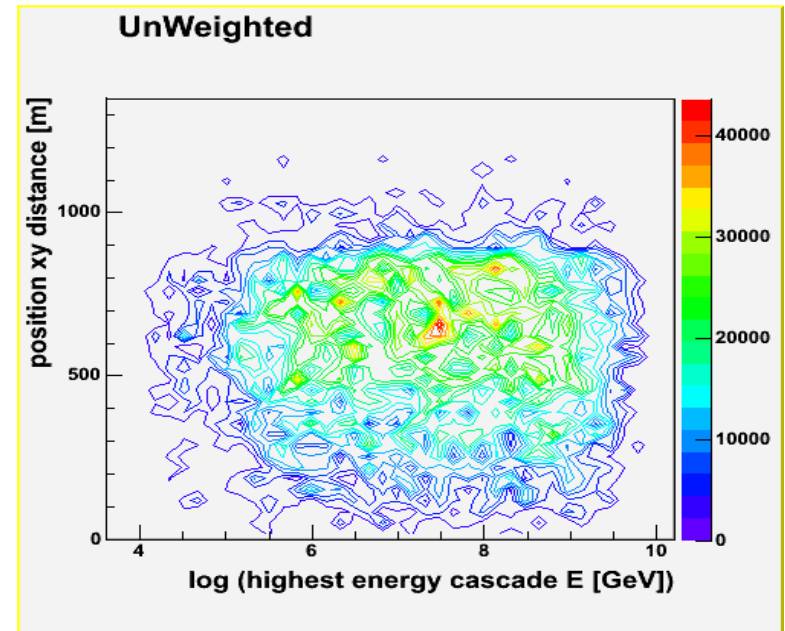
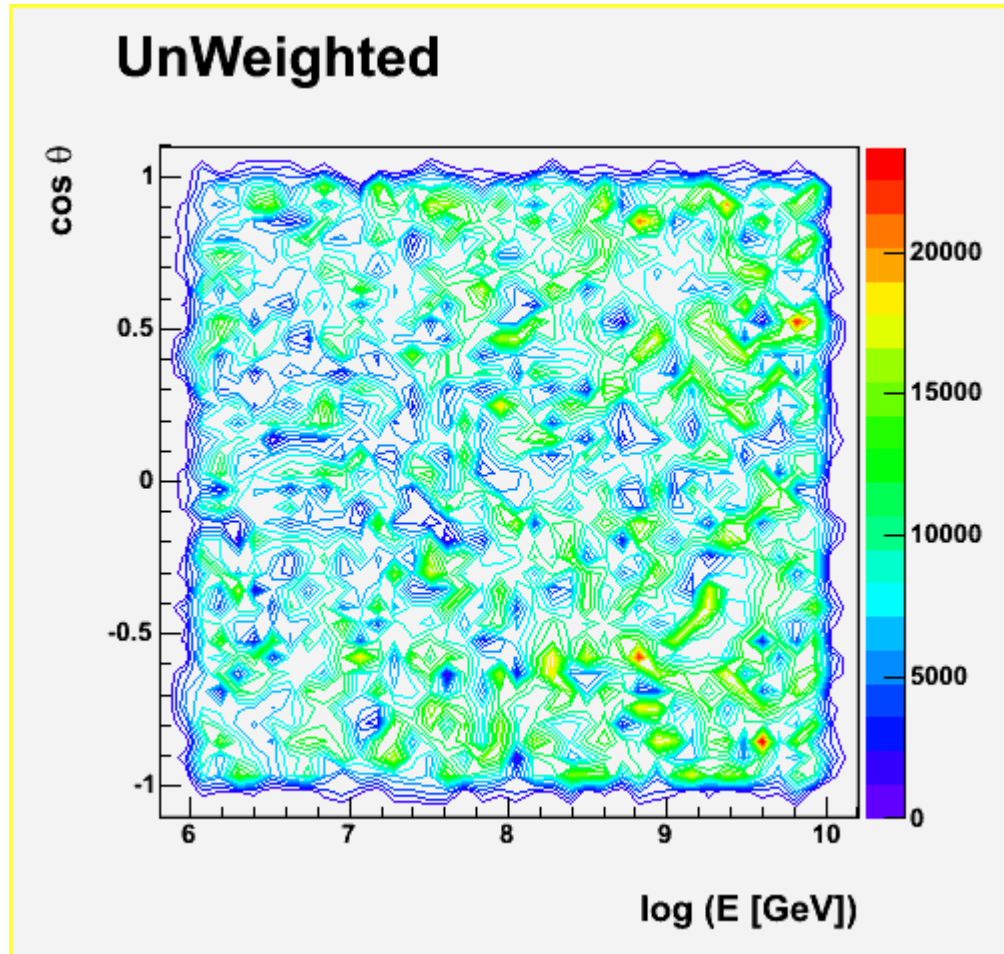
Weighted Distributions 1 (MC Truth)



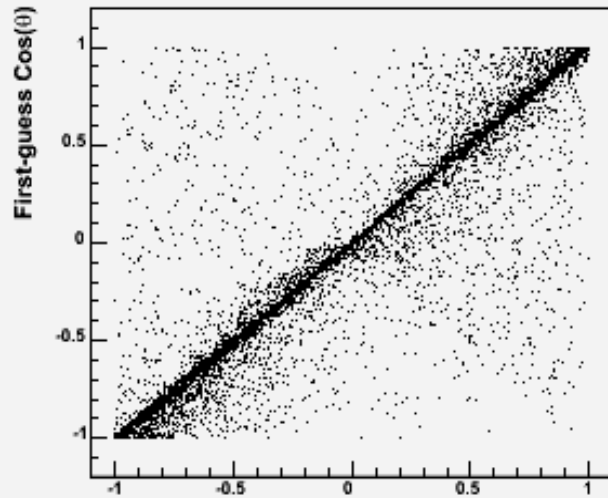
Weighted Distributions 2 (MC Truth)



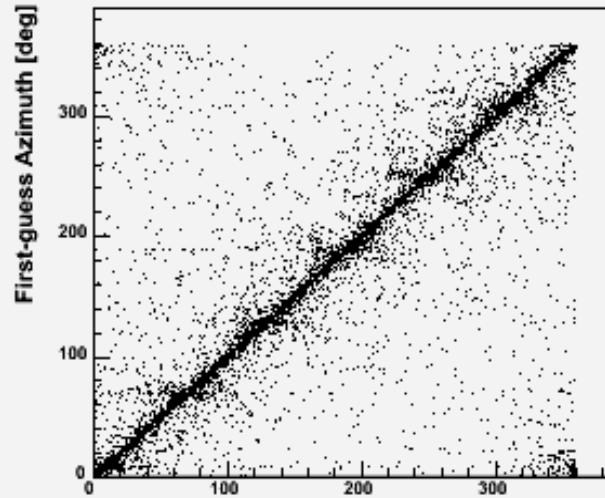
Un-weighted (MC Truth)



Can we cut atmo. bg by fast reco. ?



MC Truth Cos(θ)



MC Truth Azimuth [deg]

MC Truth

vs.

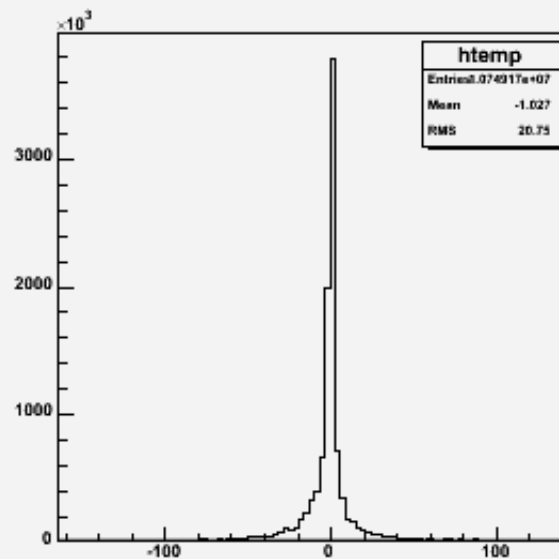
FG Reco.

cos theta (left)

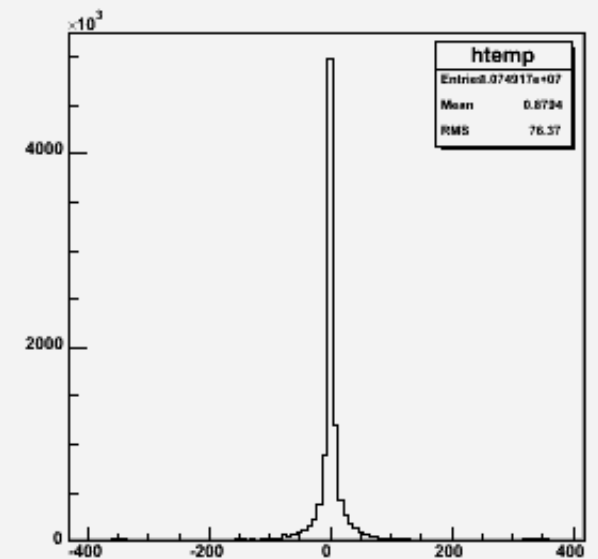
phi (right)

Delta theta (left)

Delta phi (right)



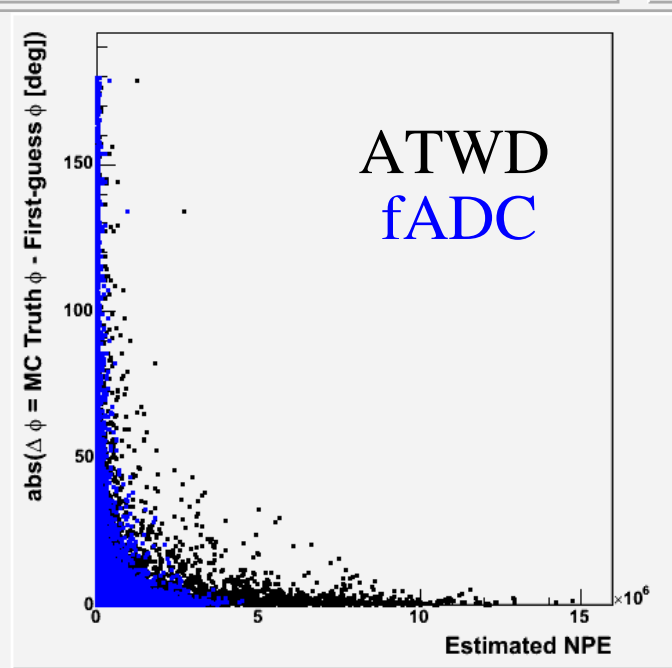
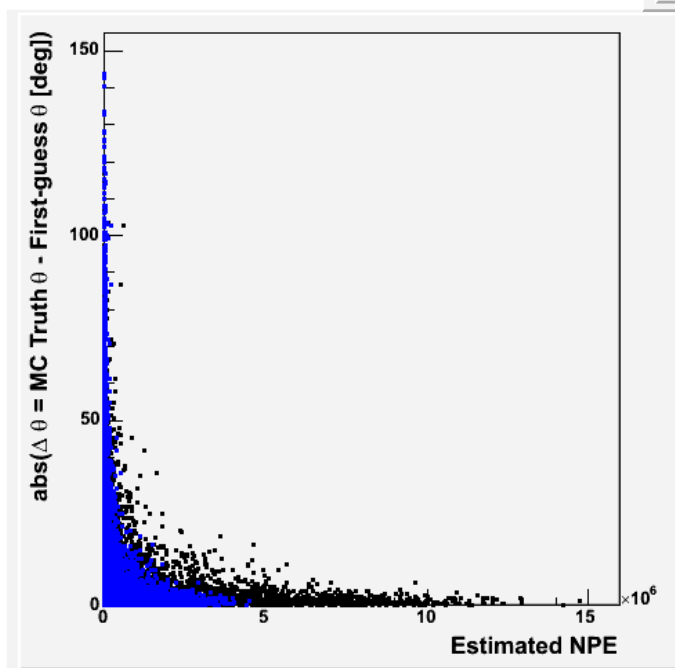
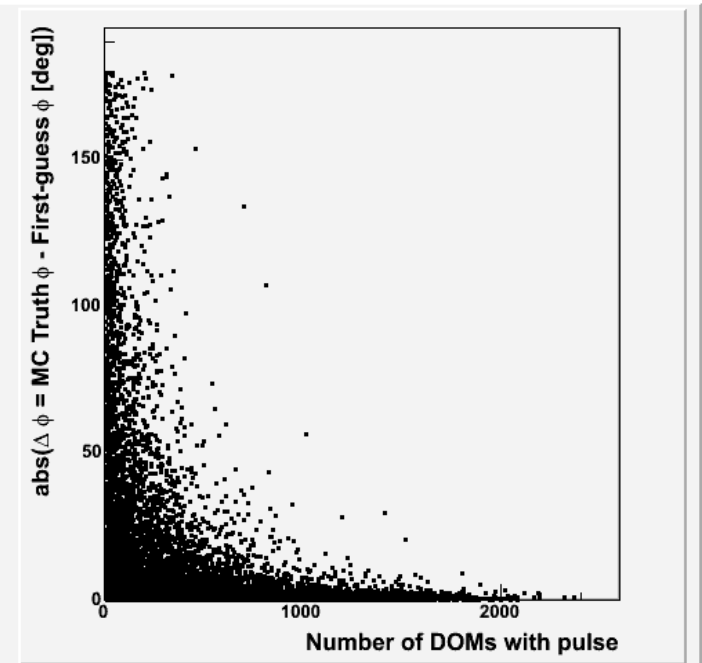
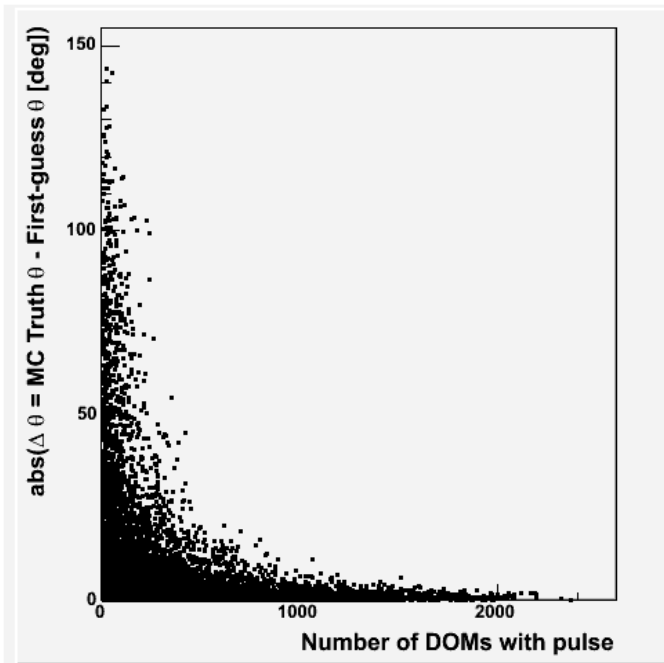
$\Delta \theta = \text{MC Truth } \theta - \text{First-guess } \theta$ [deg]



$\Delta \phi = \text{MC Truth } \phi - \text{First-guess } \phi$ [deg]

FG Quality Dependence

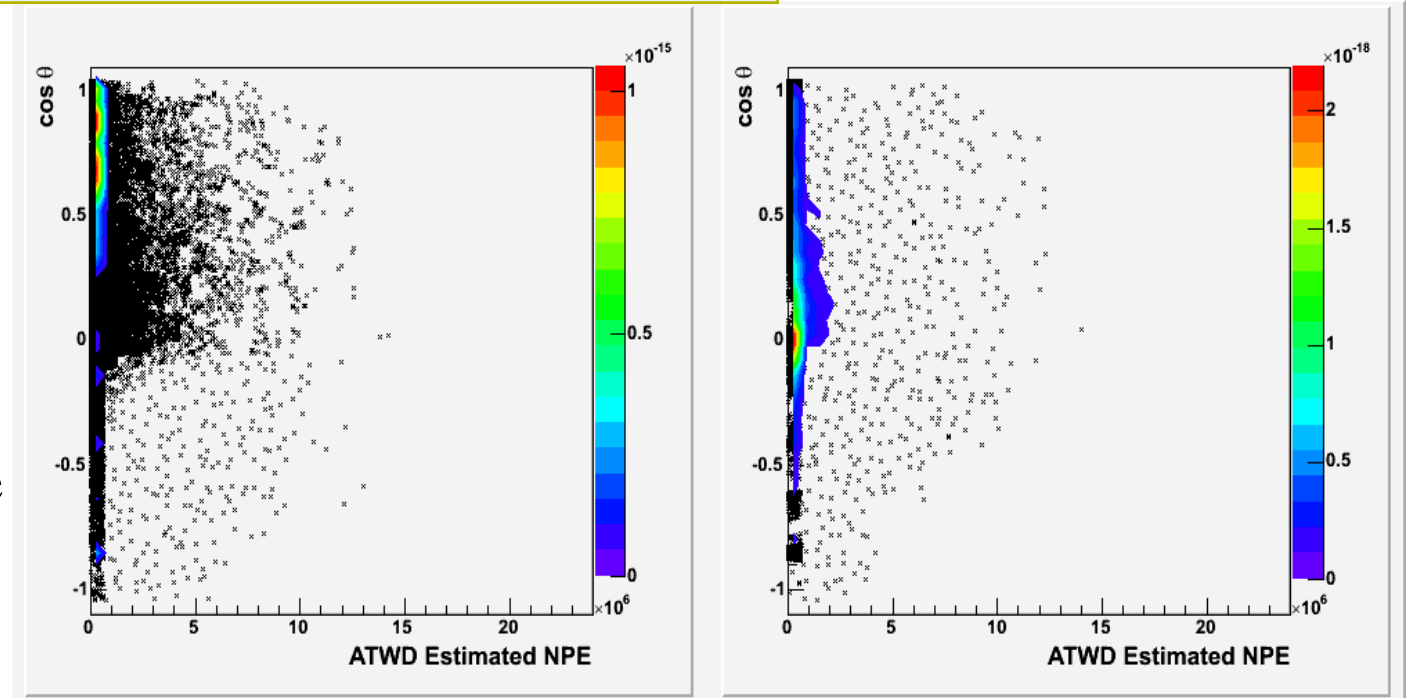
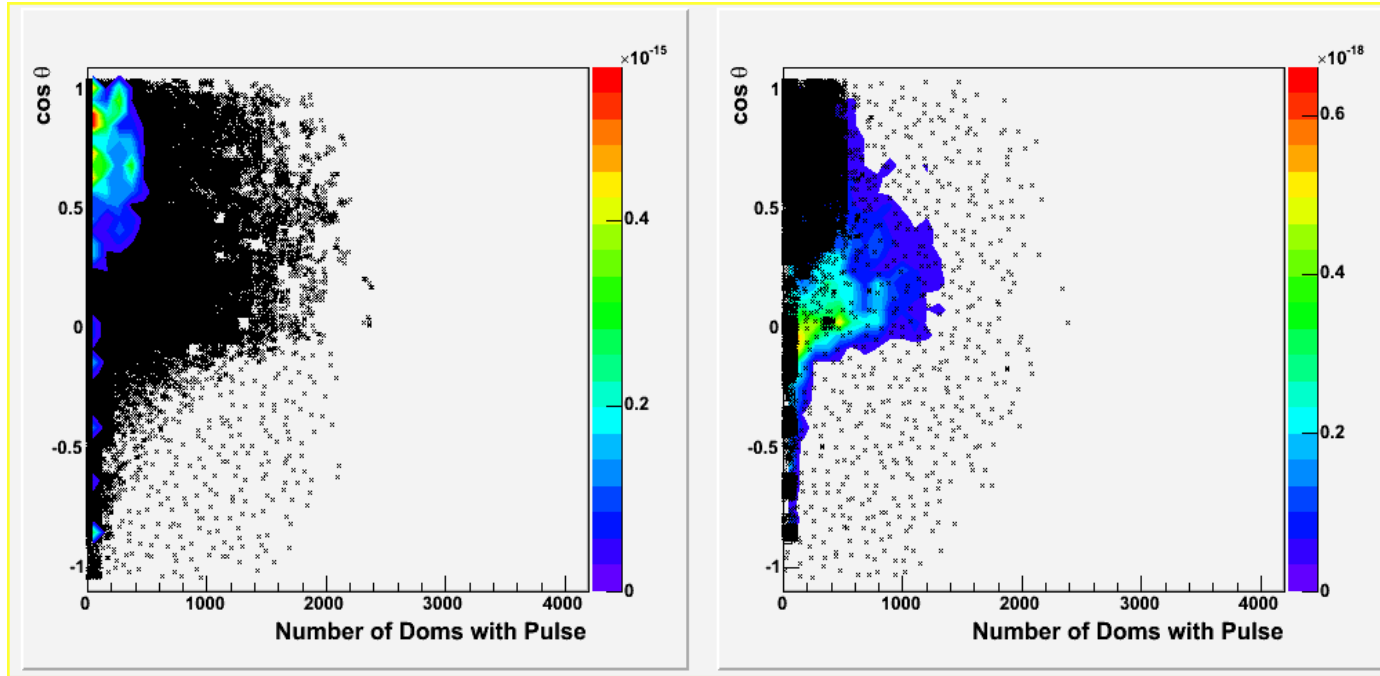
Number of DOMs
with Pulses
Zenith (left)
Azimuth (right)



ATWD
fADC

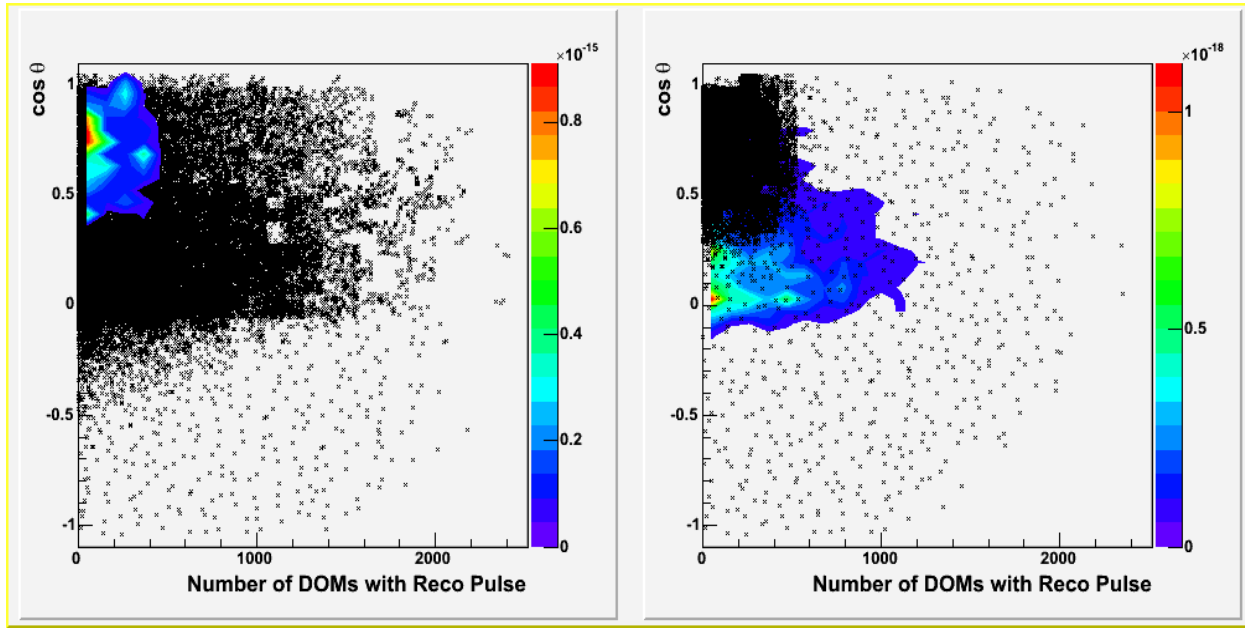
Estimated NPE
vs.
Zenith (left)
Azimuth (right)

The start position (Firstguess vs. NPE/NDOMs)



Looks like not so simple
to cut the bg out from
this figures....

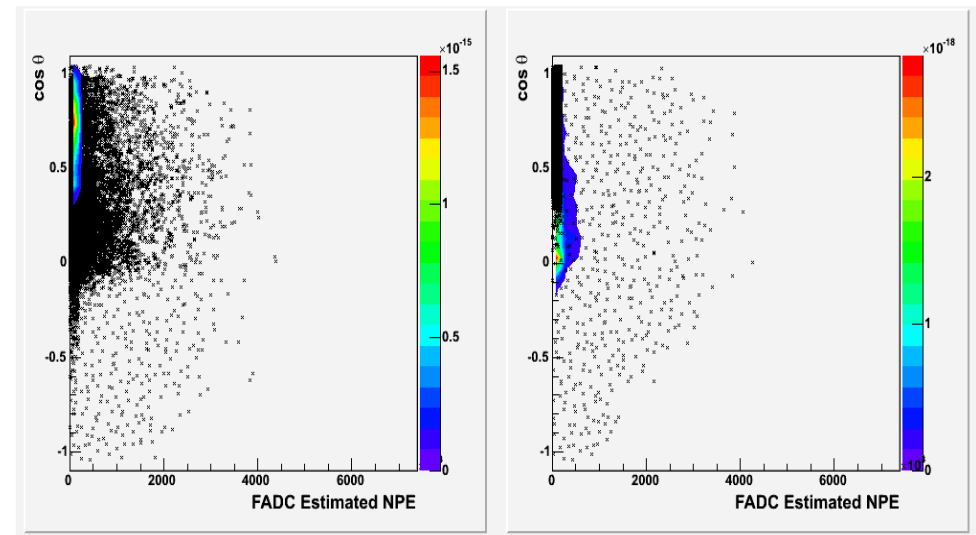
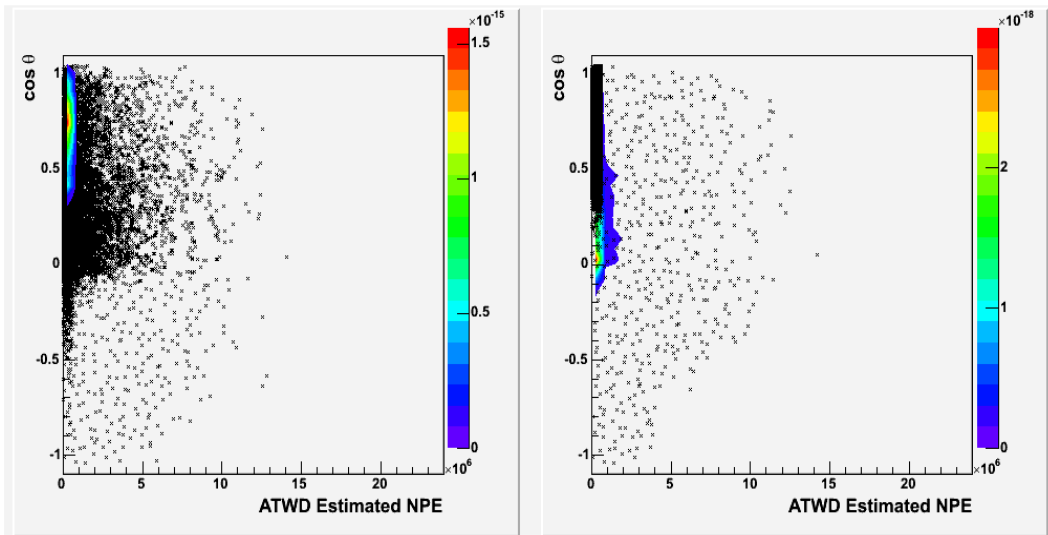
With Only Energy Estimator vs MC Truth



N DOMs vs. MC Truth

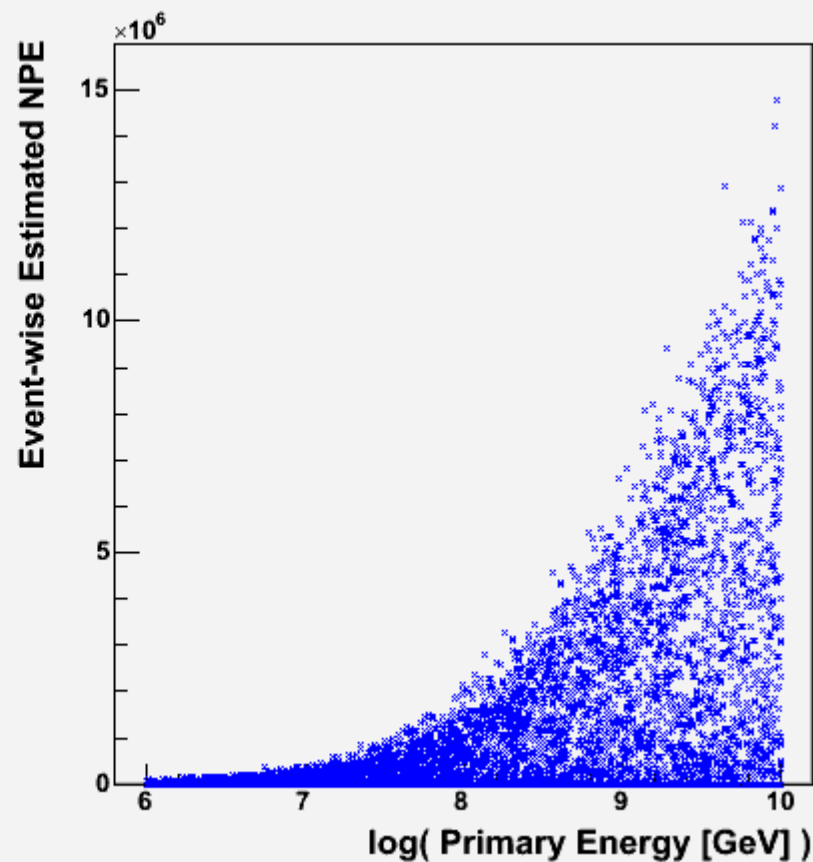
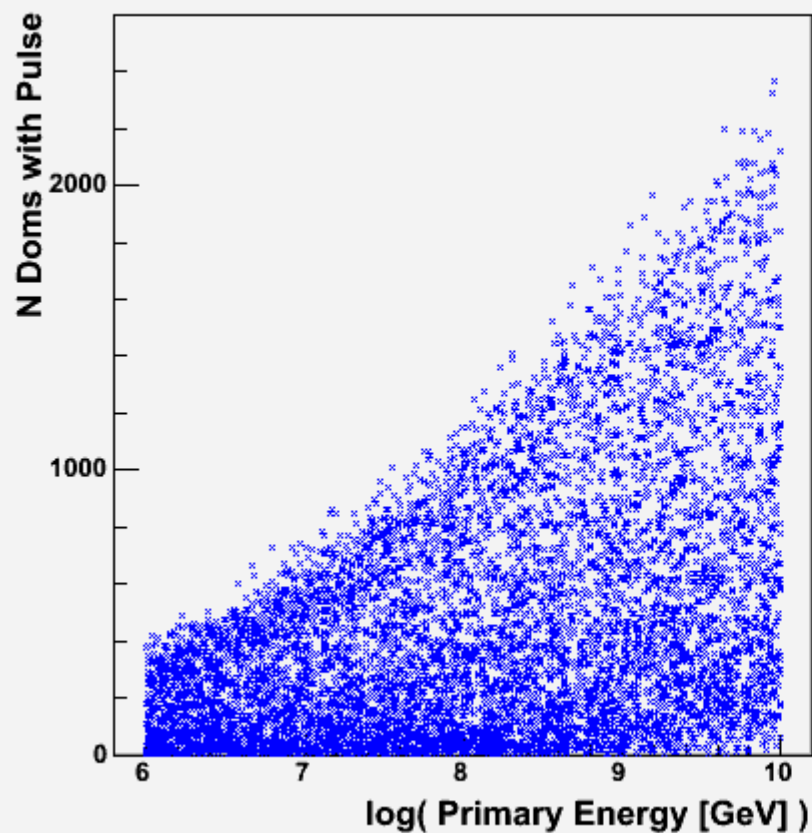
ATWD NPE vs. MC Truth

fADC NPE vs. MC Truth

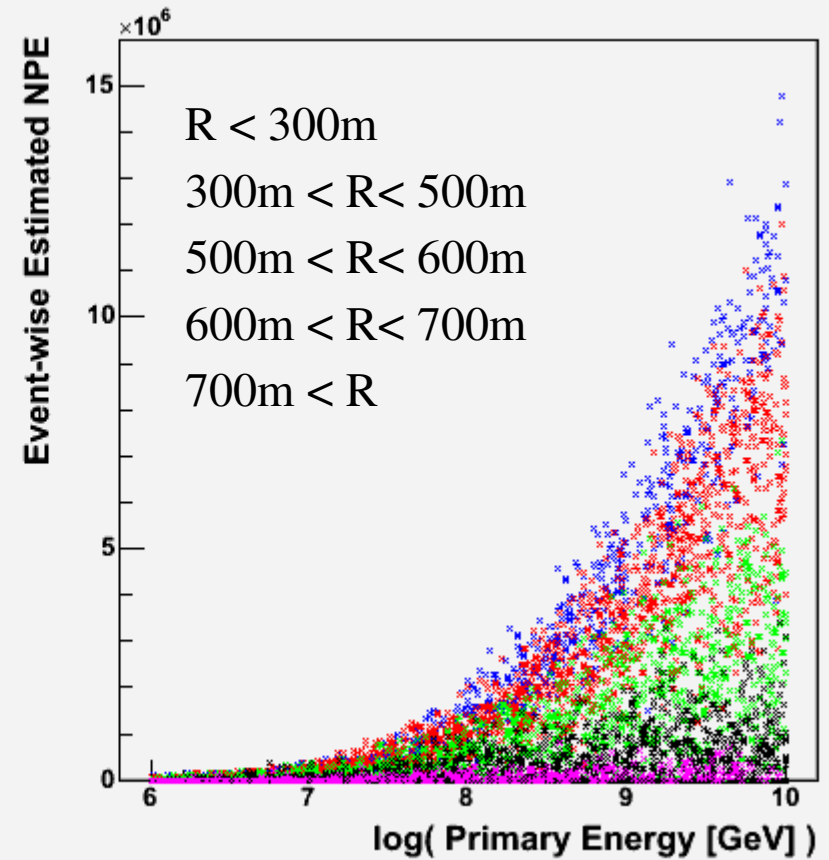
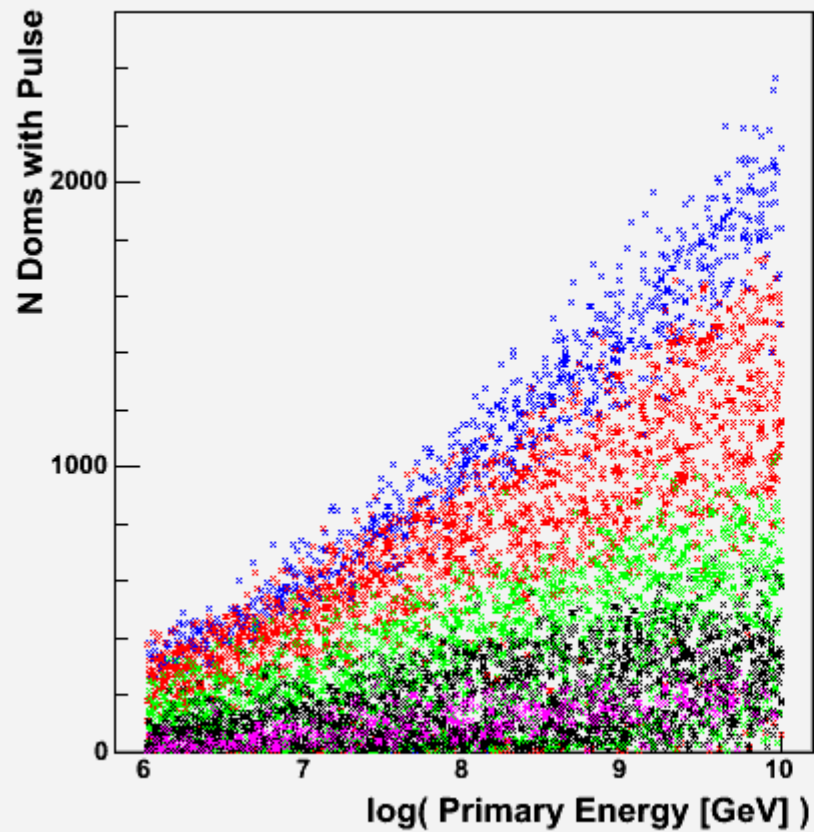


Problems in the energy estimator variables (Estimated NPE, N DOMs.)

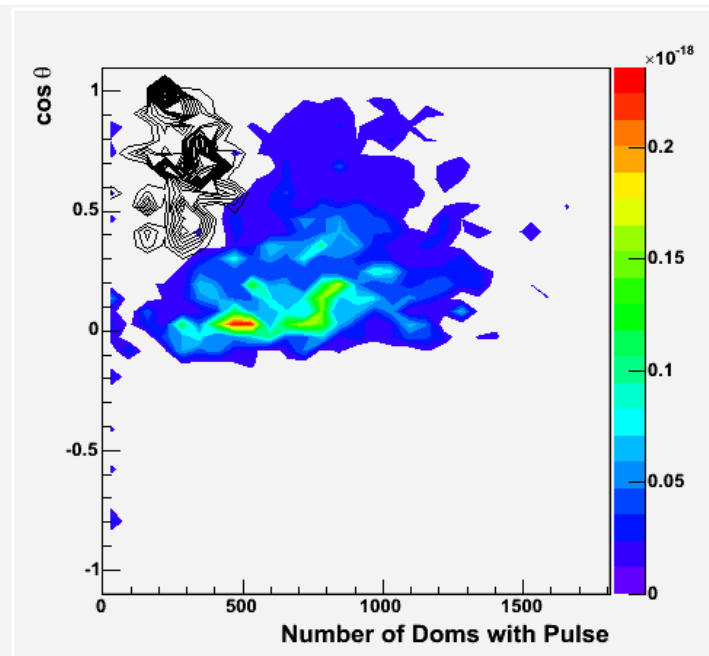
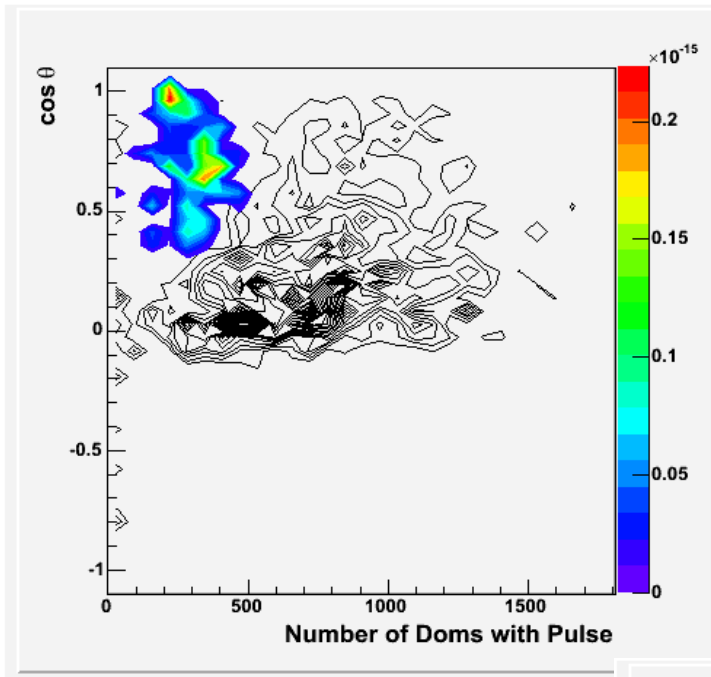
Not so sensitive to the energy...



Center of Brightness dependence

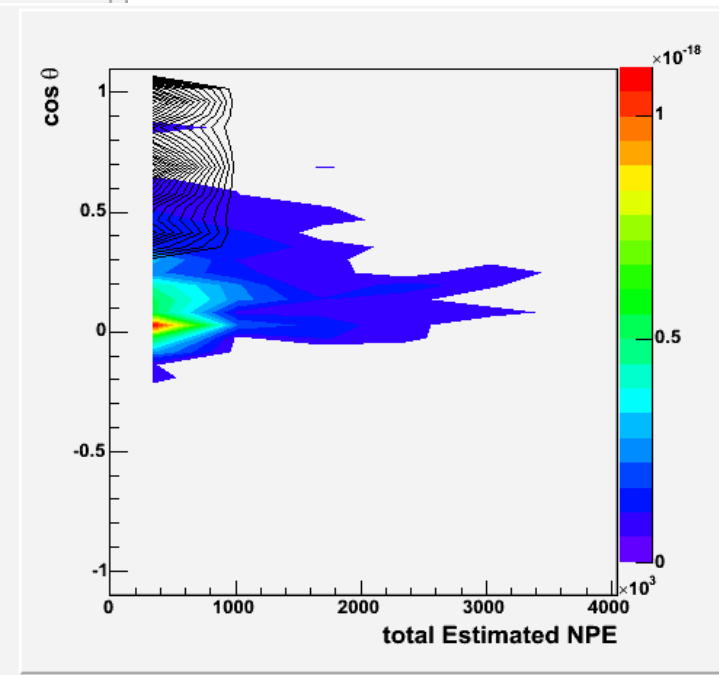
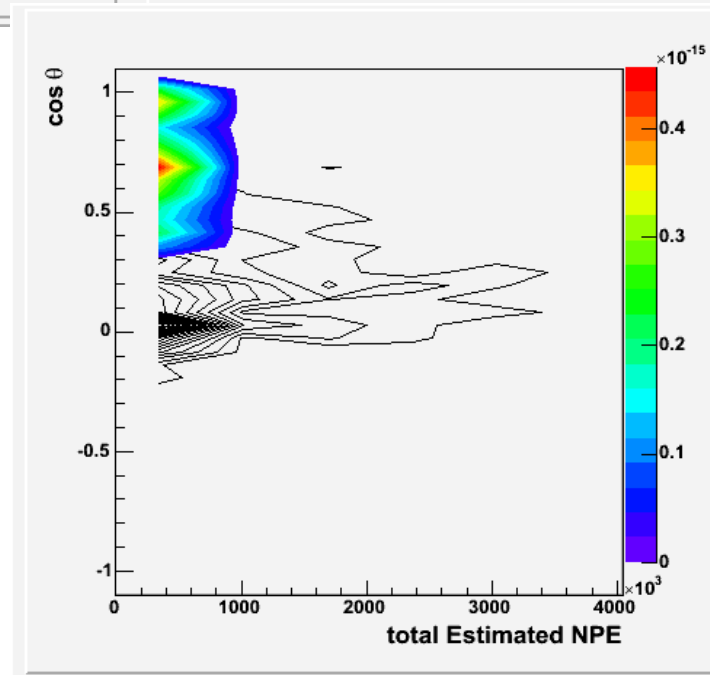


Weighted on Center of brightness $R < 500$ m



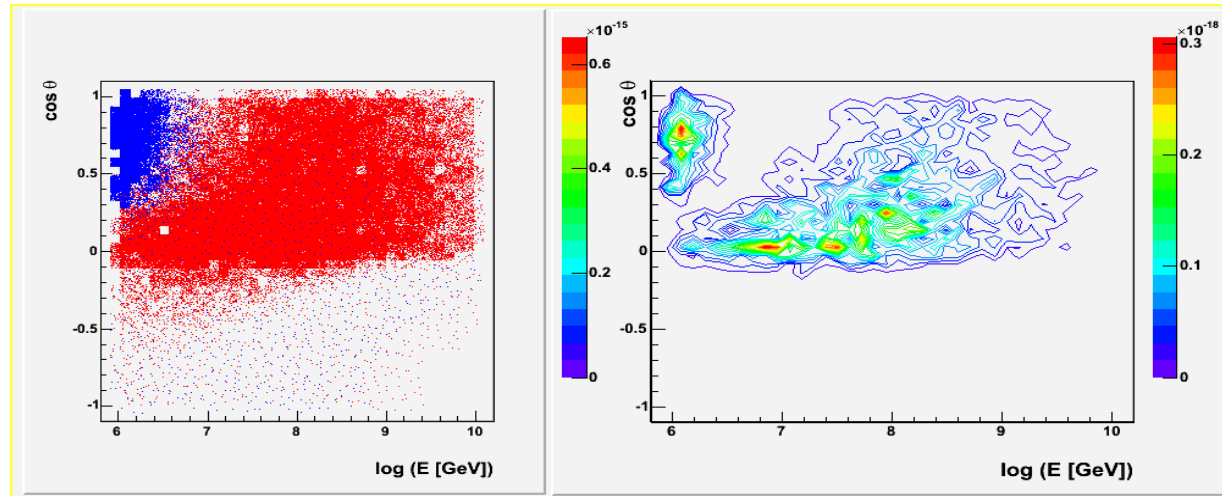
First-guess
vs.
Number of
DOMs
with Pulse

First-guess
vs.
Est. NPE

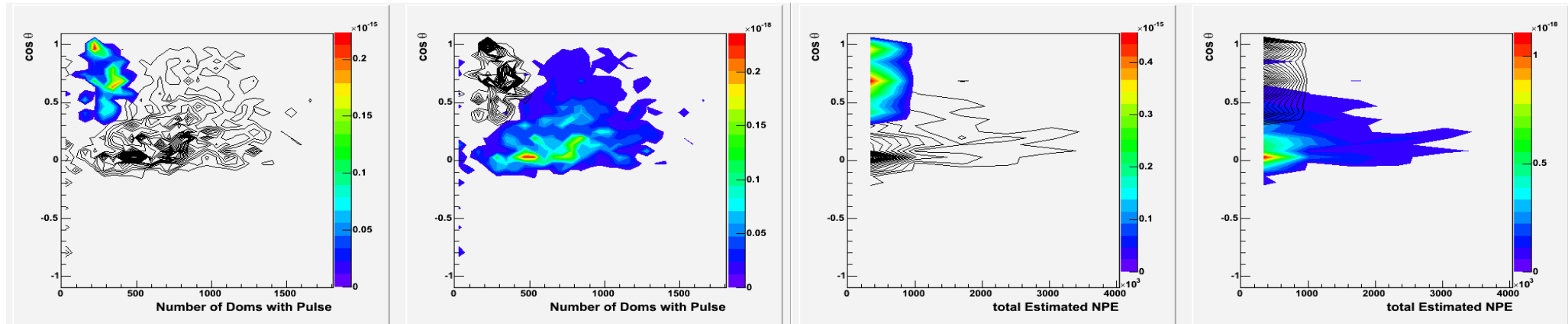


If you compare with MC Truth...

MC Truth



Fast Reco



Unweighted Events with center of brightness < 500 cm

