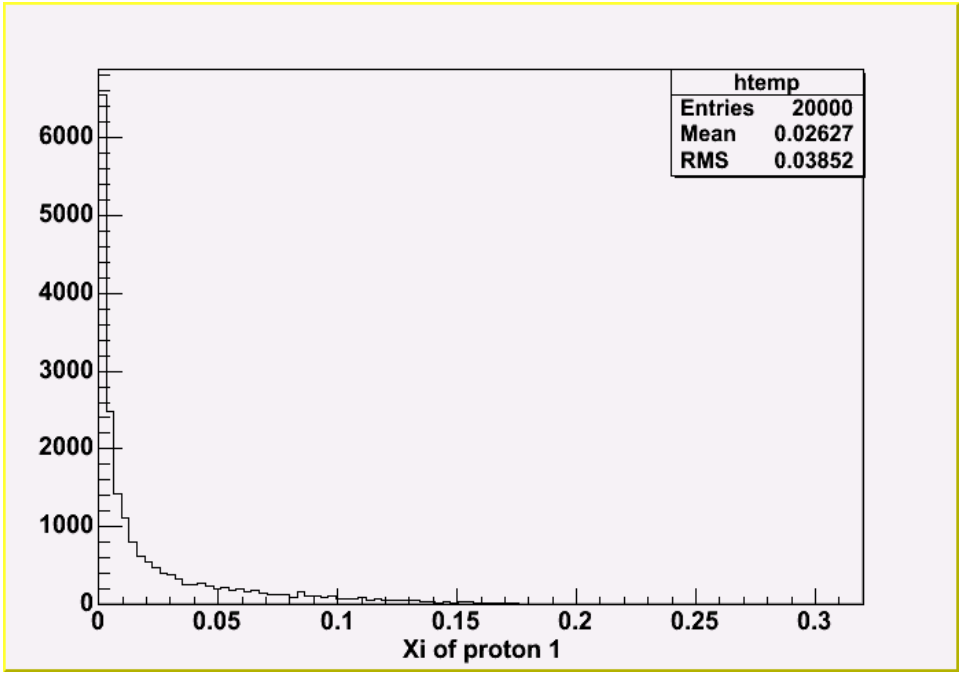
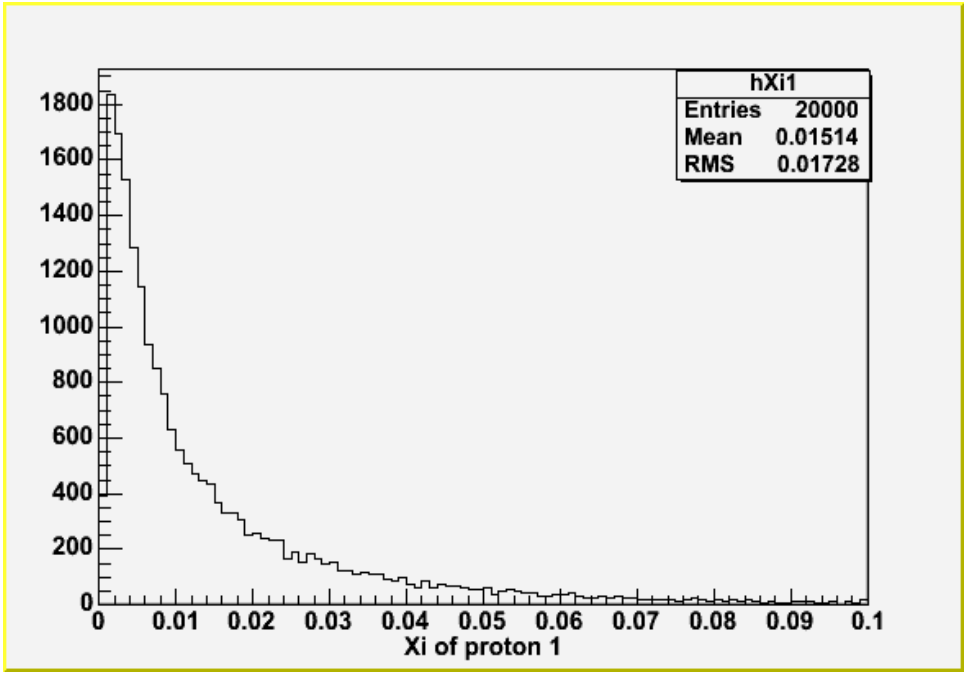
EDDE and Exhume Comparisons

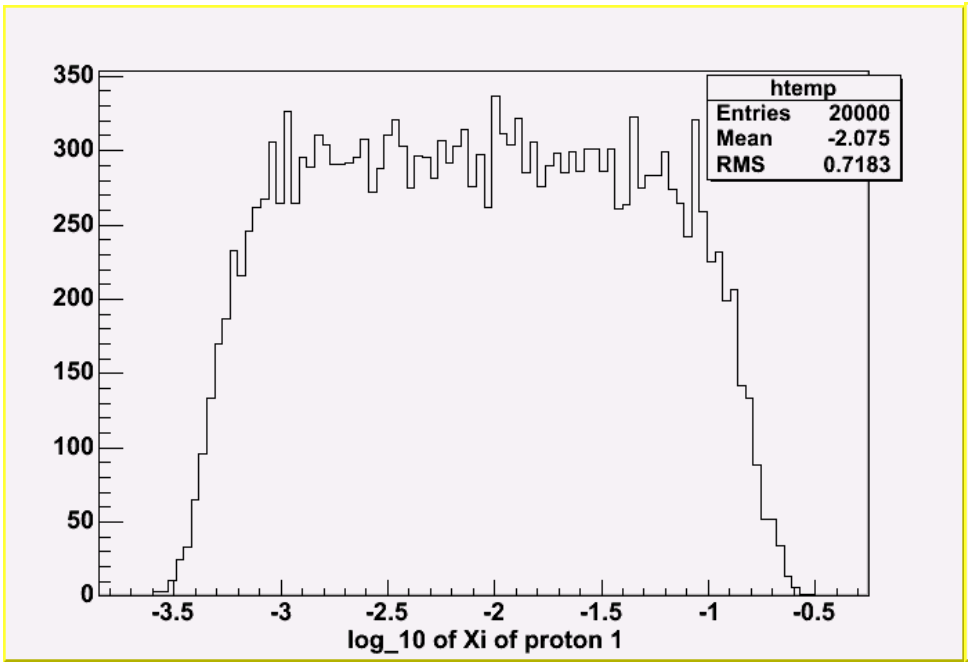
Creighton Hogg
University of Wisconsin-Madison
1/18/05

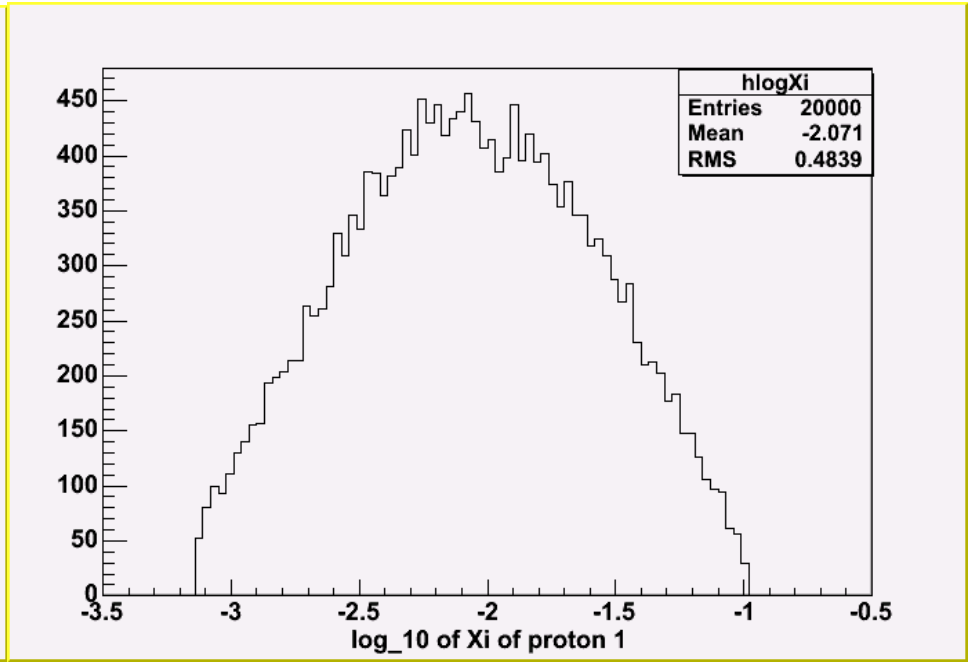


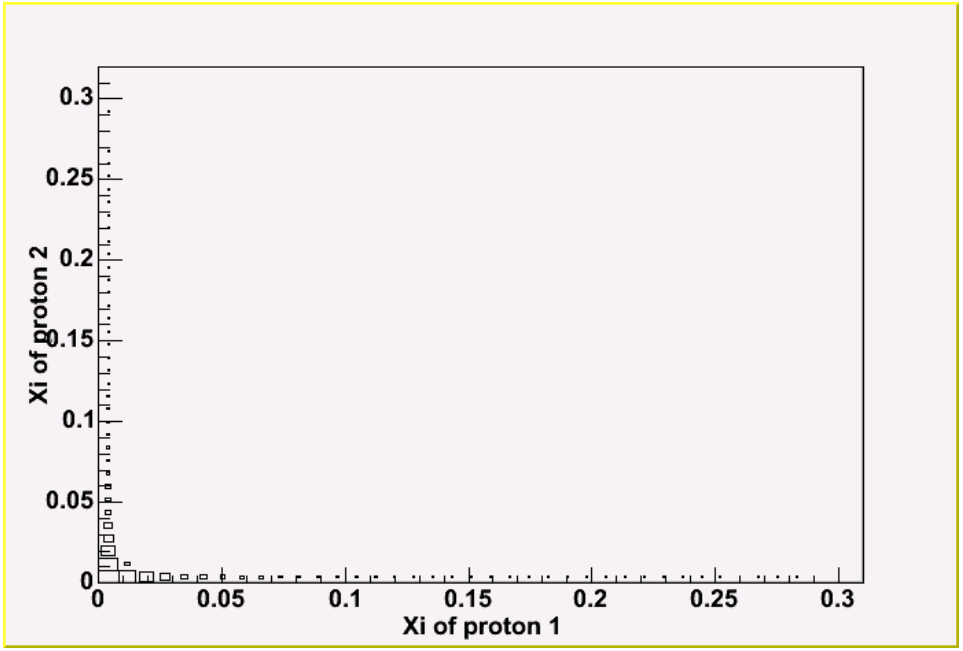


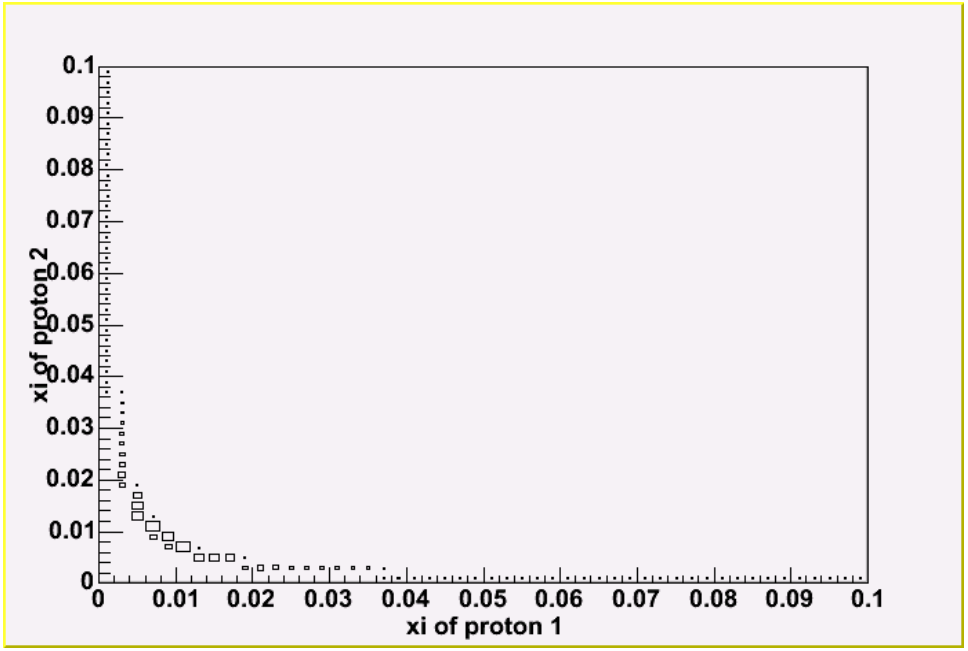
Edde distributions on are the left hand side, and Exhume on the right throughout the talk..

The Xi distribution is much more narrow in Exhume and covers a smaller range.

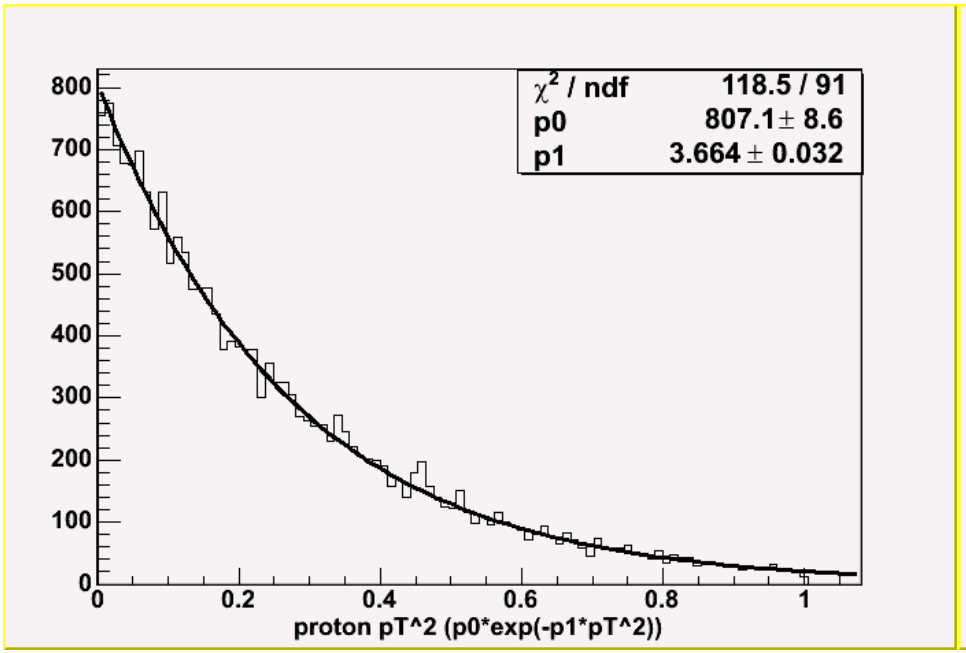


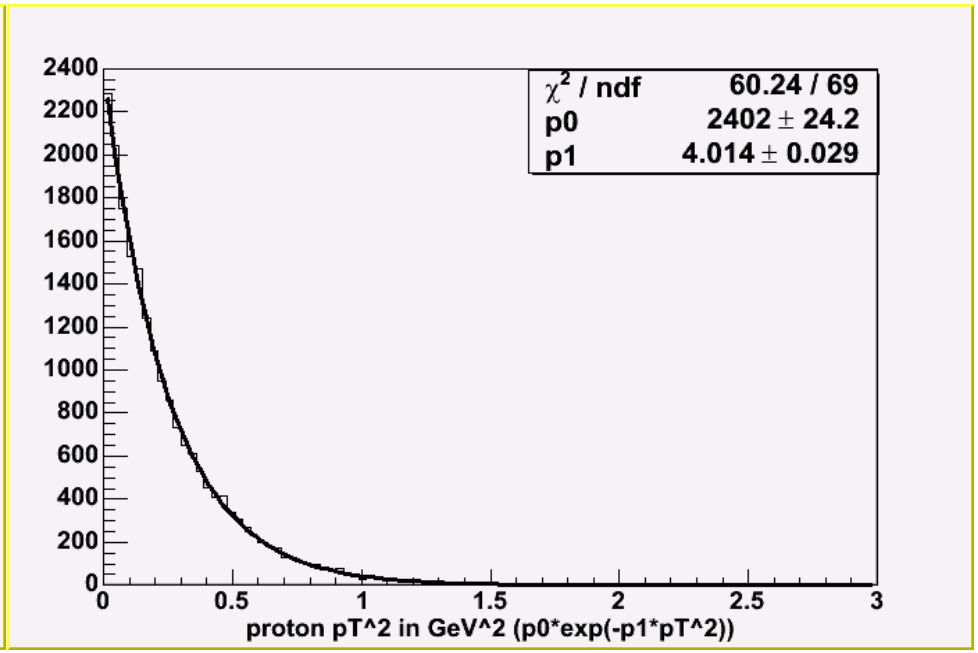


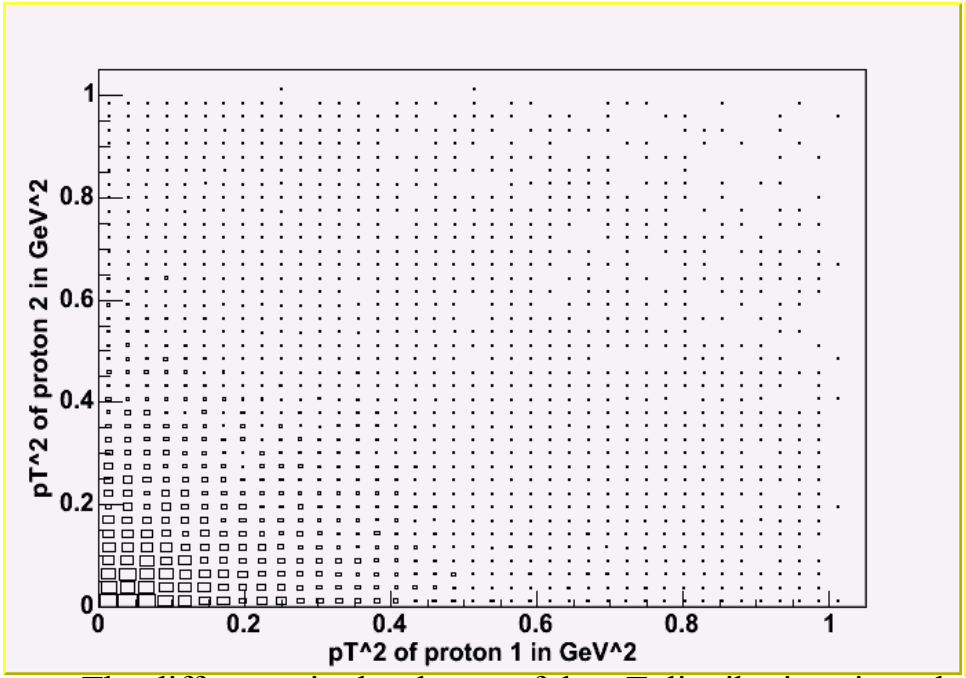


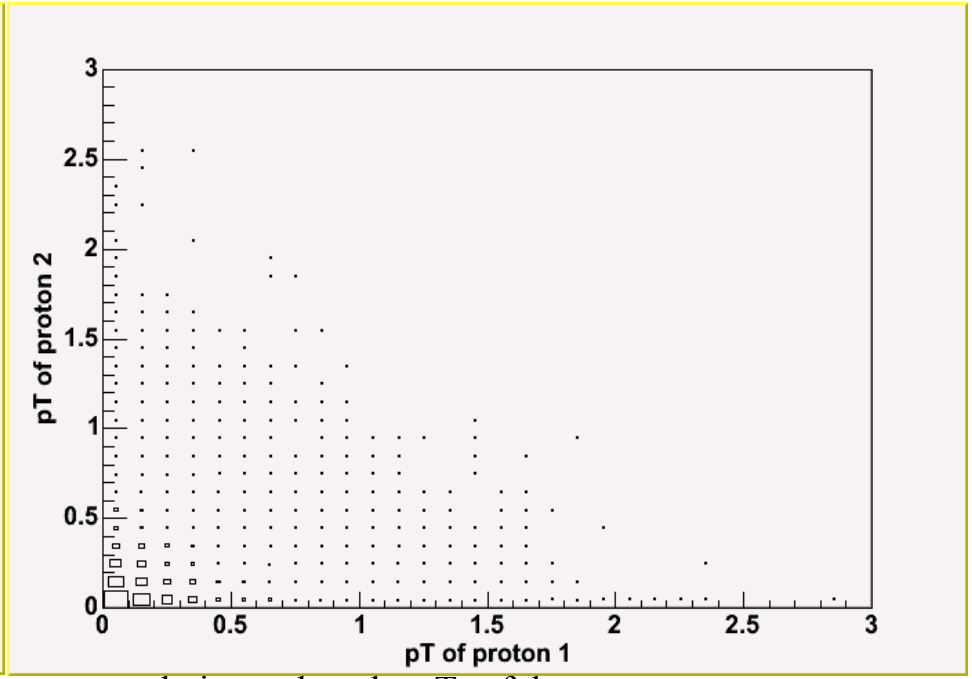


For EDDE the pT of one of the protons is always less than 1, but for Exhume it has a longer tail..

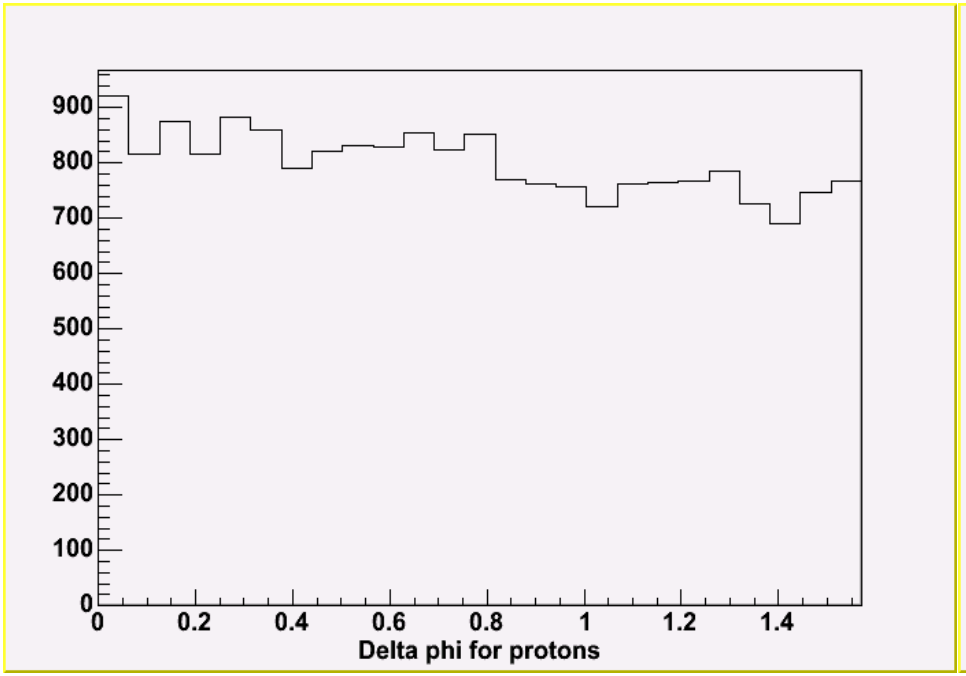


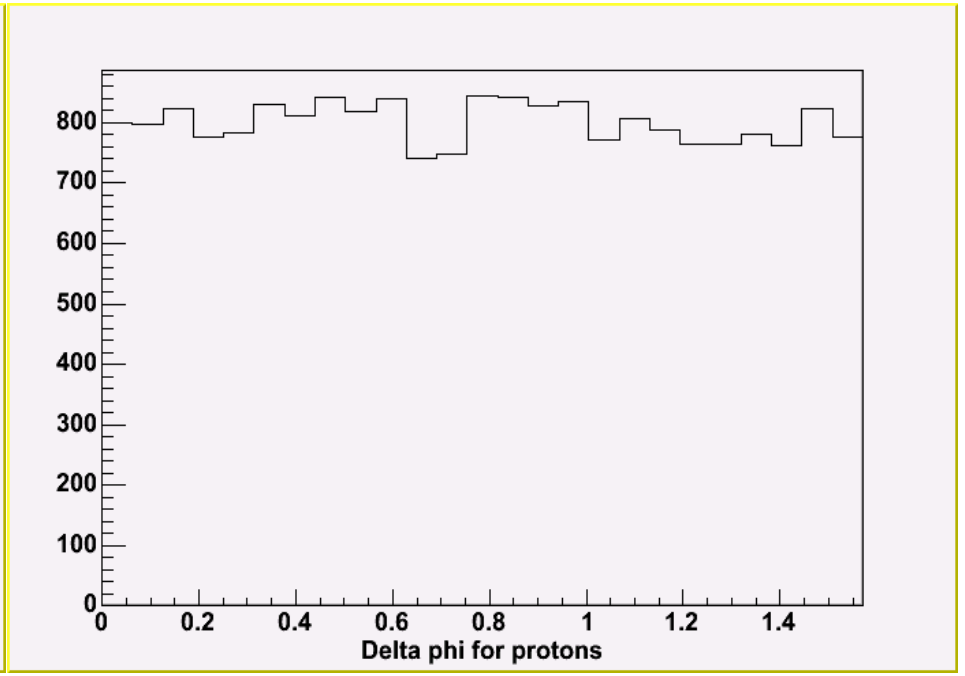


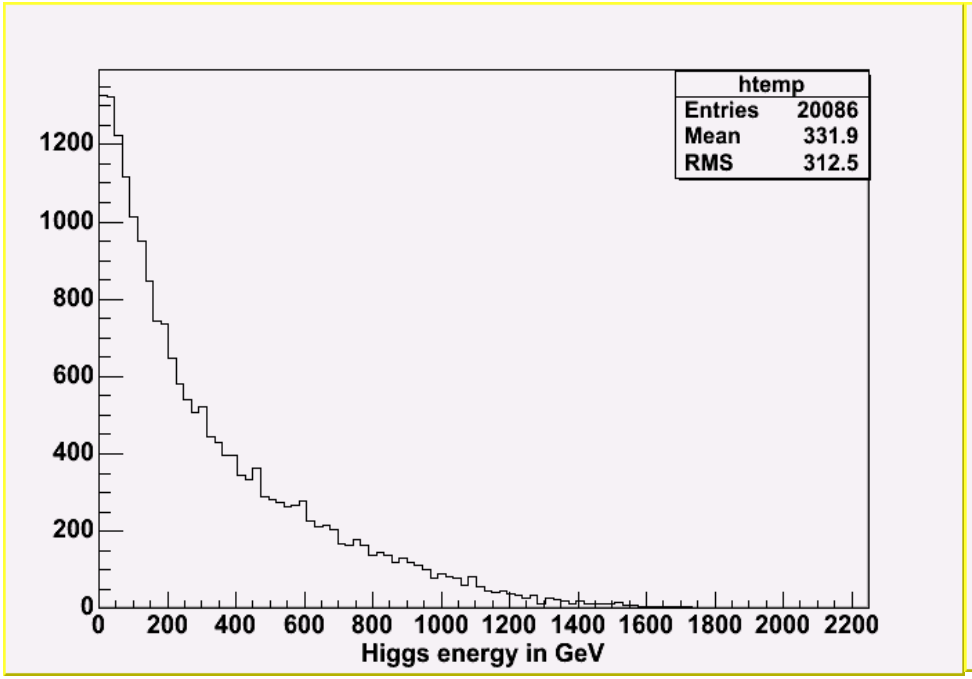


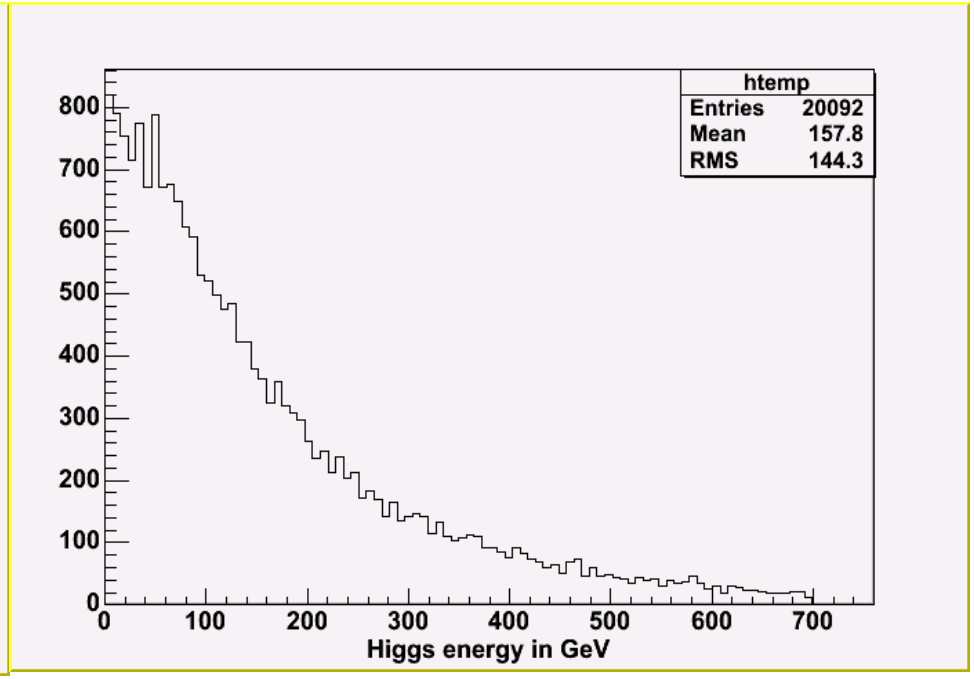


The difference in the shapes of the pT distributions is perhaps more obvious when the pTs of the protons are plotted against each other.

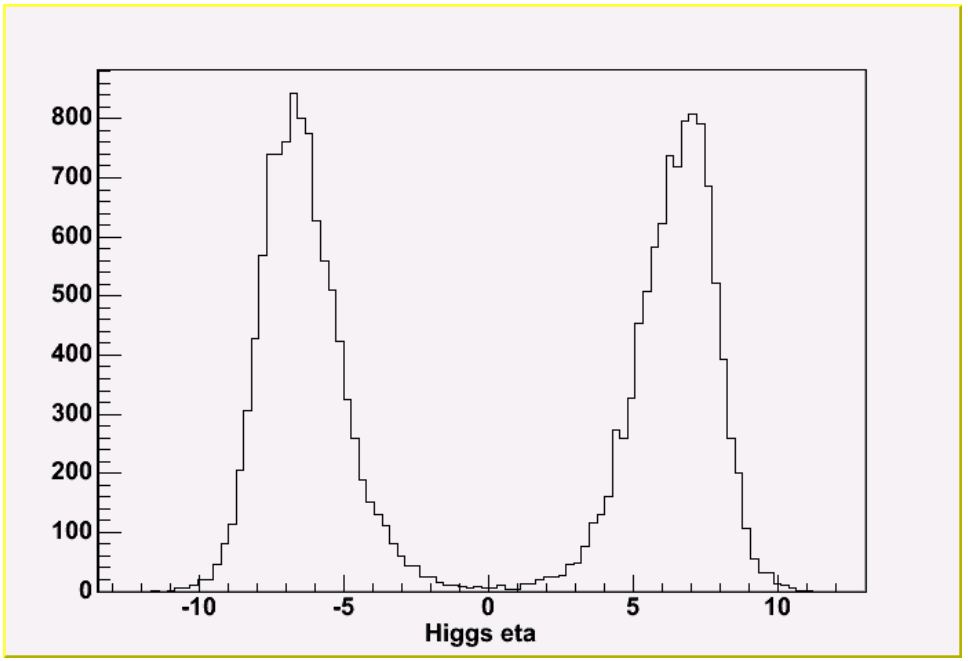


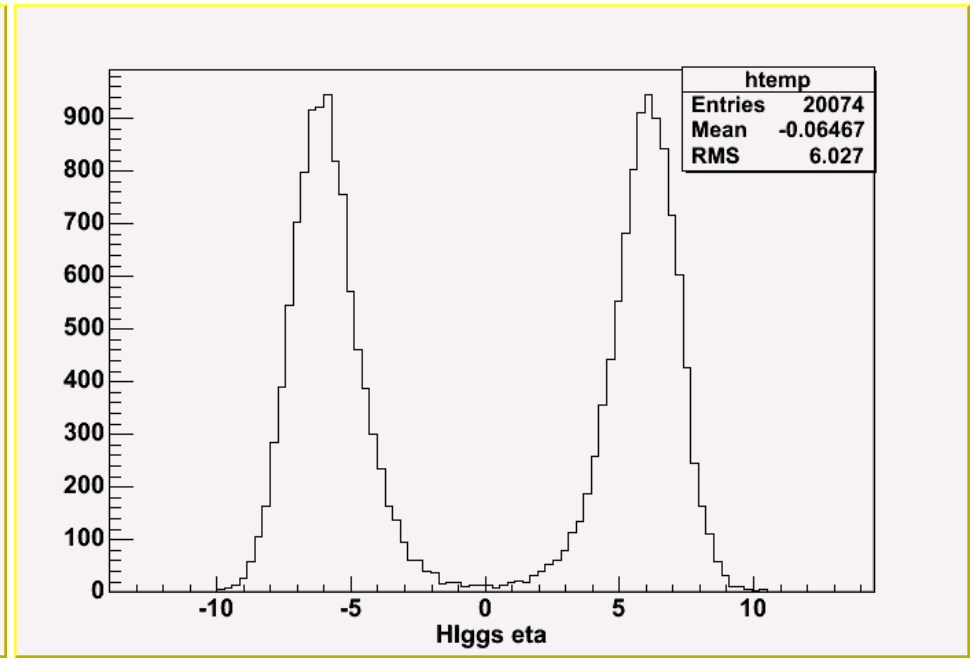


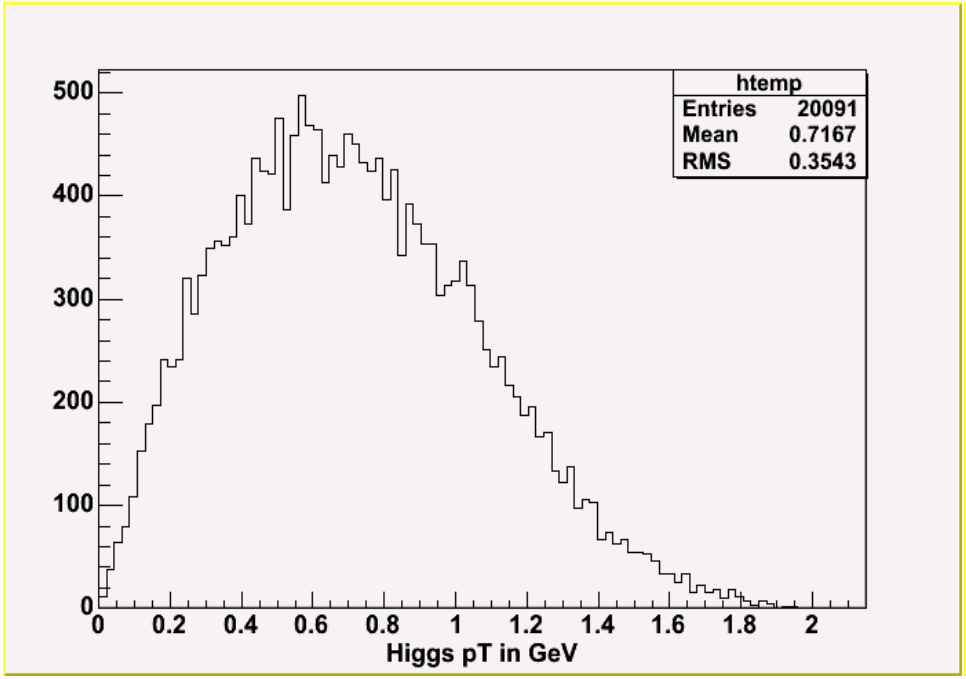


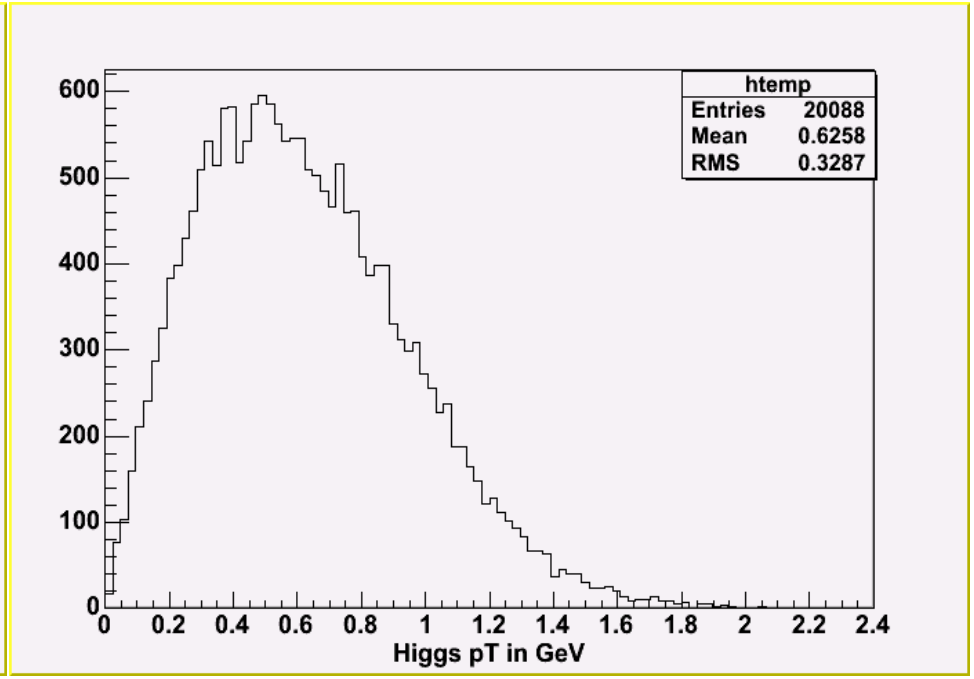


The energy distribution for the Higgs is much broader in EDDE, but this follows from the differences in the Xi distributions.

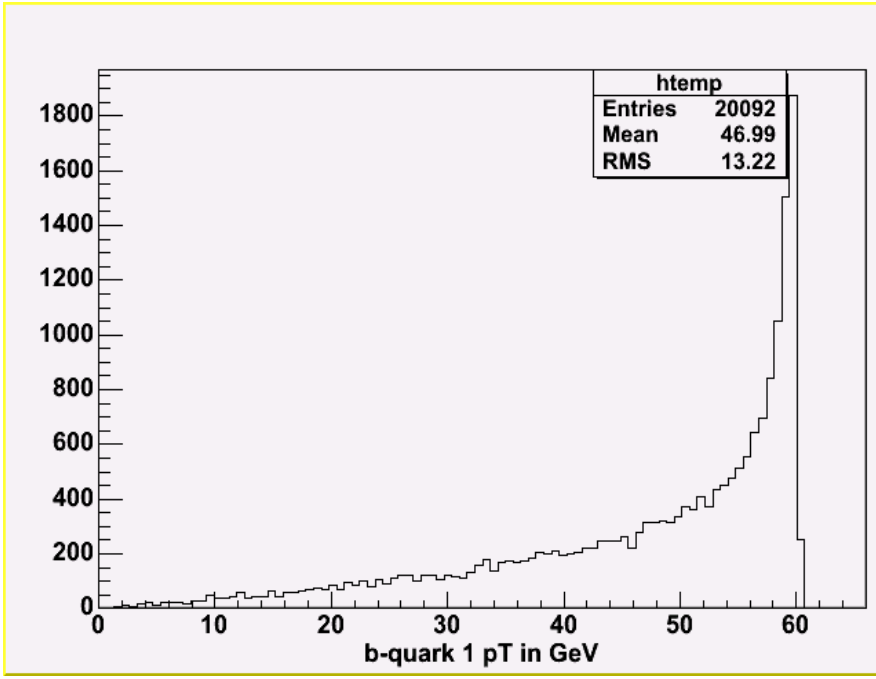


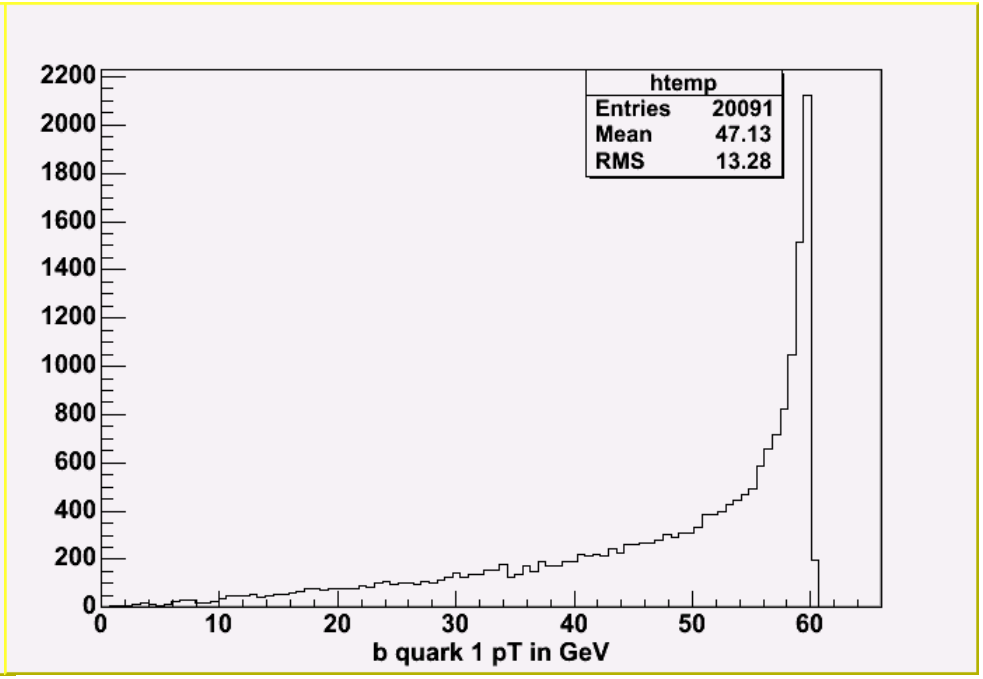




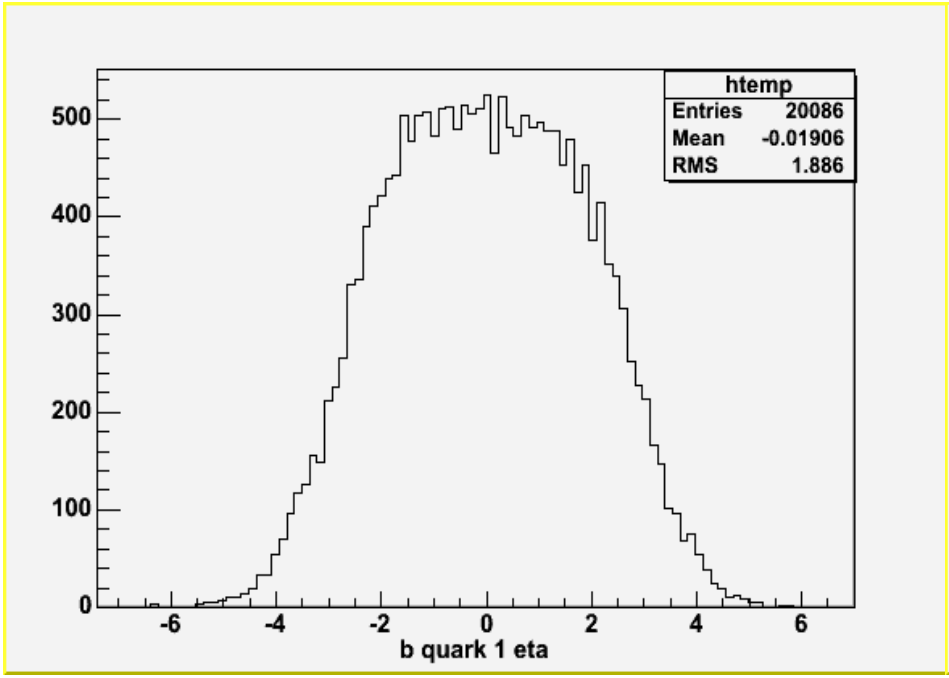


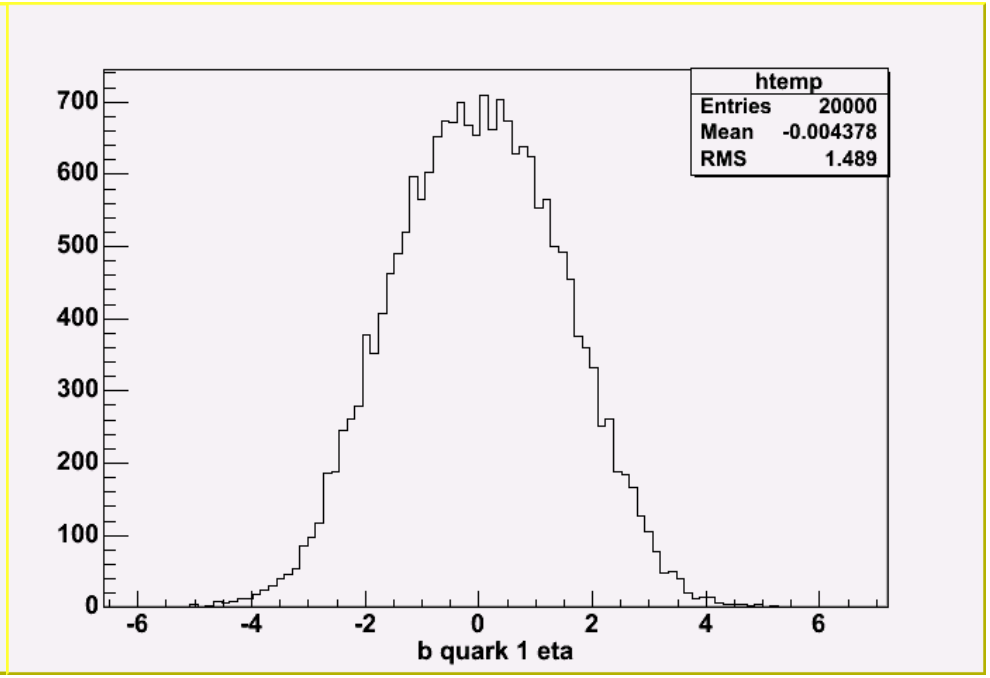
The pT distribution of the Higgs differers slightly between the two generators, with the center and width of the peak being a little different.

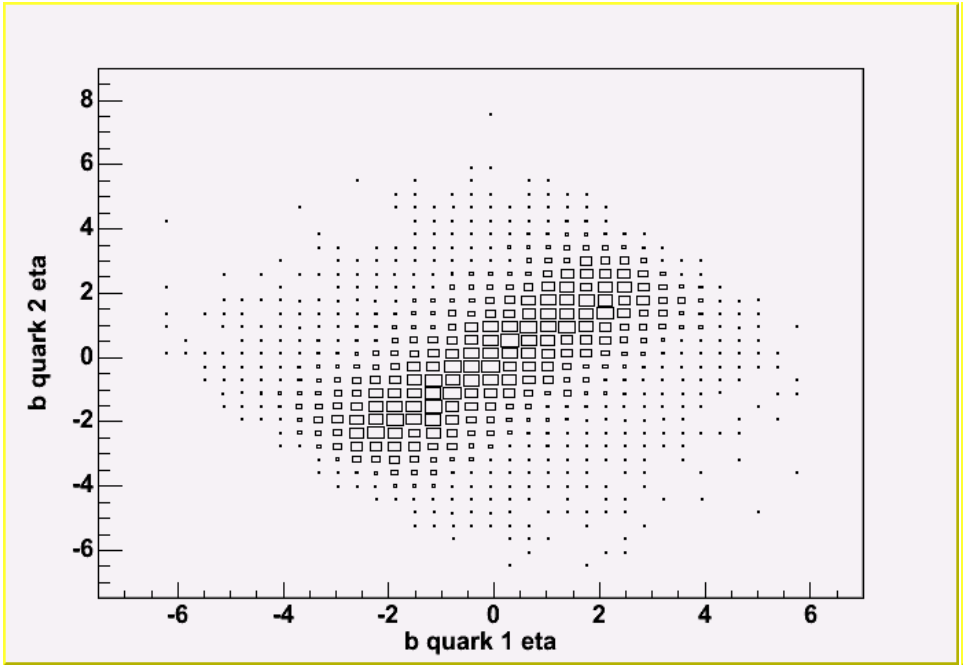


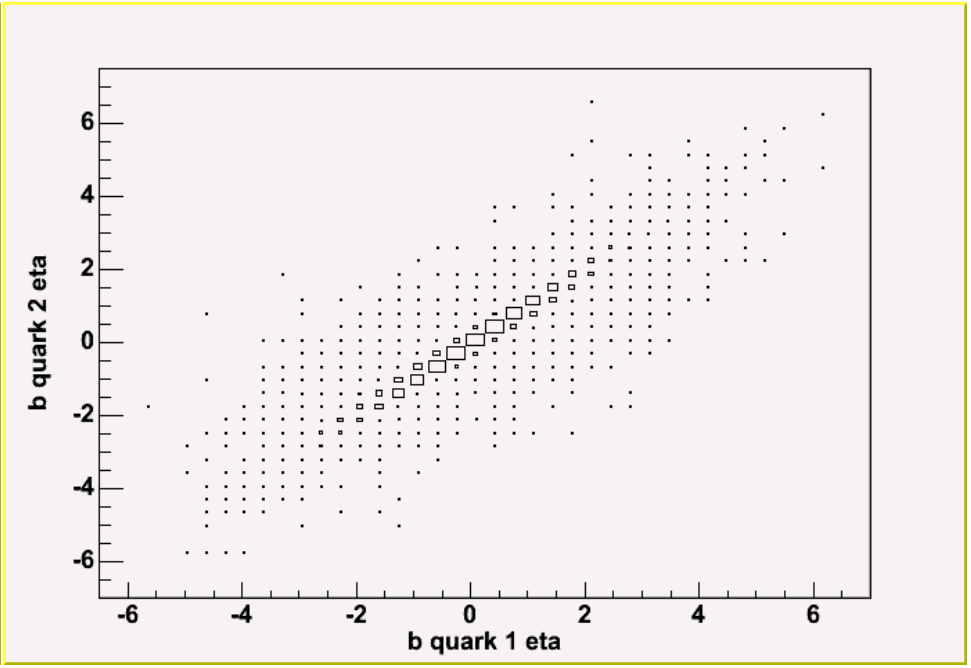


It is important to note that in Exhume, the b-quarks are much more central.









As can be seen here, Exhume has the b-quarks much more central than EDDE with a larger number of events in which both b quarks are within an eta of 3.5.

Summary

- Xi distributions have very different shapes. In Exhume it covers a smaller range.
- Higgs energy distribution is much broader in EDDE because of the difference in Xi.
- Resulting b-quarks are much more central in Exhume than in EDDE.