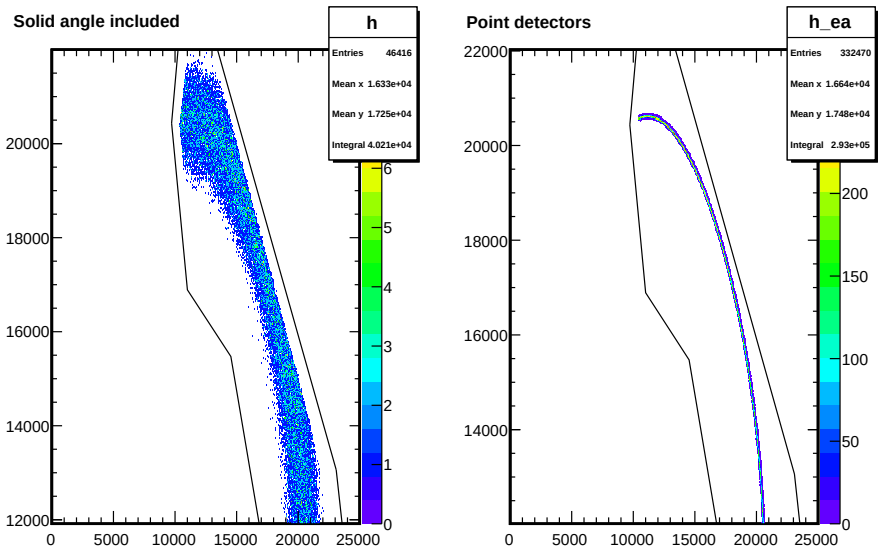

Figure 1: 2D $E_{\alpha 1}$ vs $E_{\alpha 2}$ plots for realistic collimators (on left) and ideal point detector and beam spots (on right). These are both cut spectra, and the axes should correspond roughly to the splitpole setup.

- No cross-sections have been included here, it's just to investigate solid angle effects.
- For ideal, point-like models
  - Alphas emitted at +- 45 deg exactly.
  - Beamspot is a single point
  - No target effects included
- Collimators are:
  - Silicon: 1.1 mm
  - Splitpole: 2 mm
- $E_{\alpha 1}$ is measured in the silicon
- Cut is an approximation to pick only small spectator momenta
- Note:
  - The steep rise in the number of counts for α-pairs corresponding to low proton energy. This probably needs to be accounted for.

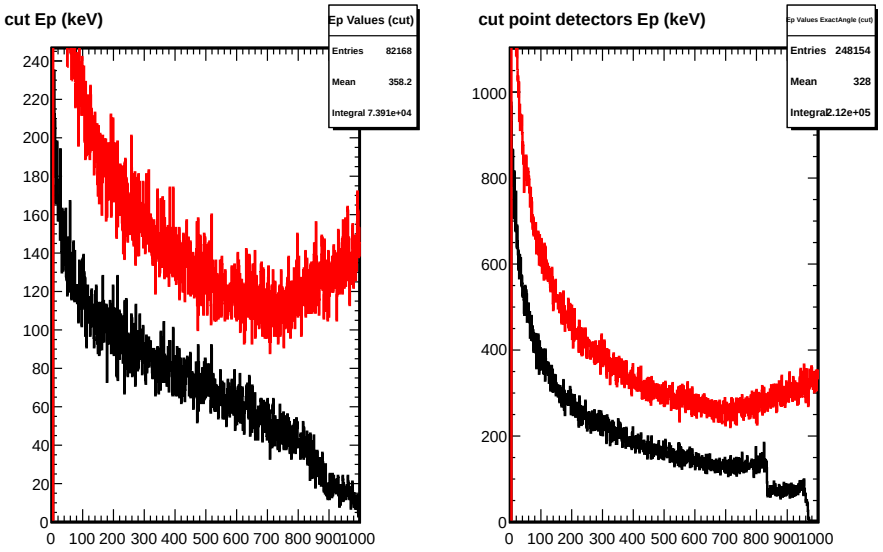

Figure 2: Proton energies calculated from $E_{\alpha 1}$ and $E_{\alpha 2}$. On left are the realistic models, and on the right are the ideal point detectors. Red lines correspond to uncut spectra (i.e., including high spectator momenta), and black is the cut (i.e., corresponding to the events in Fig. 1).