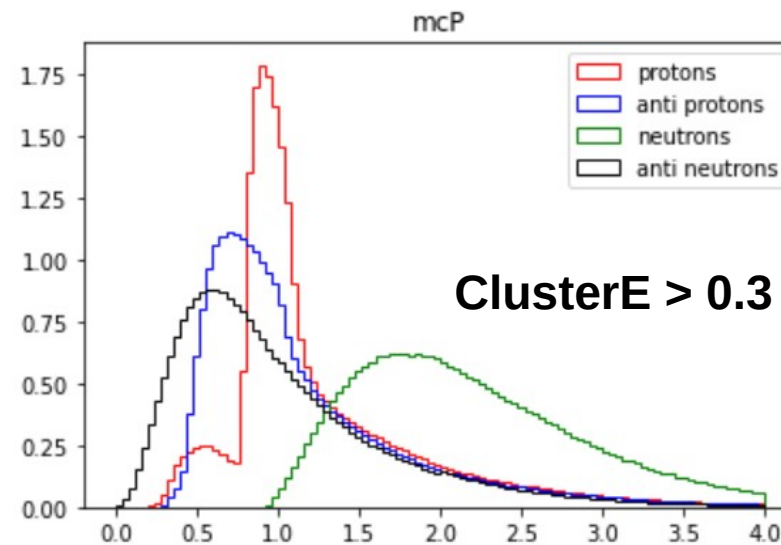
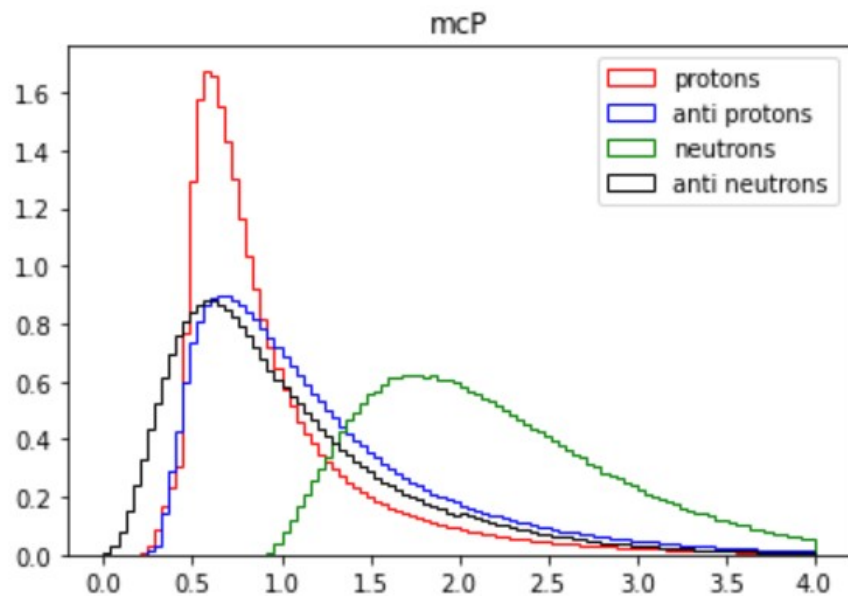
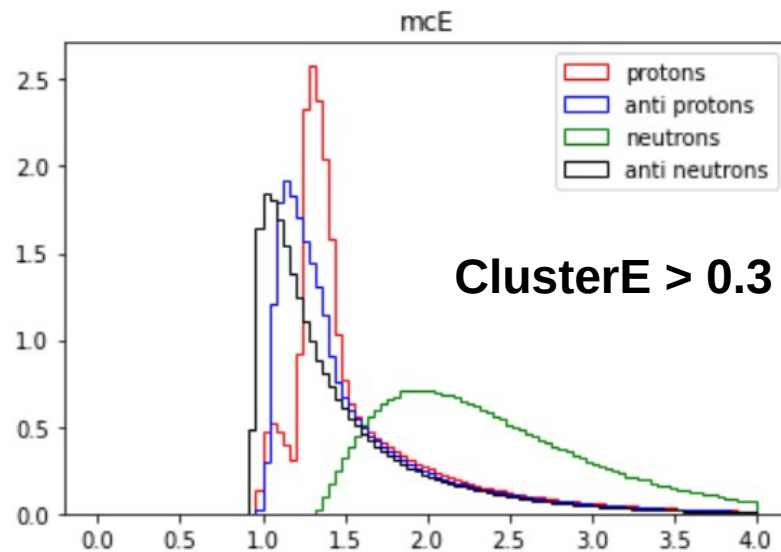
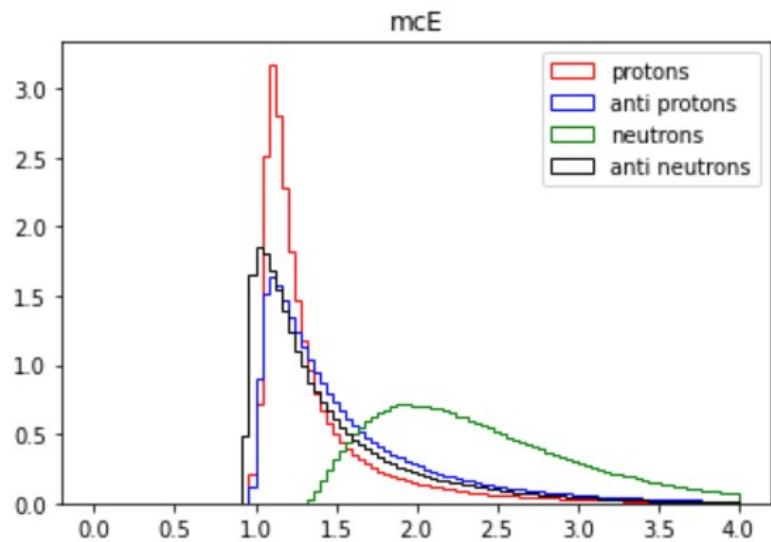


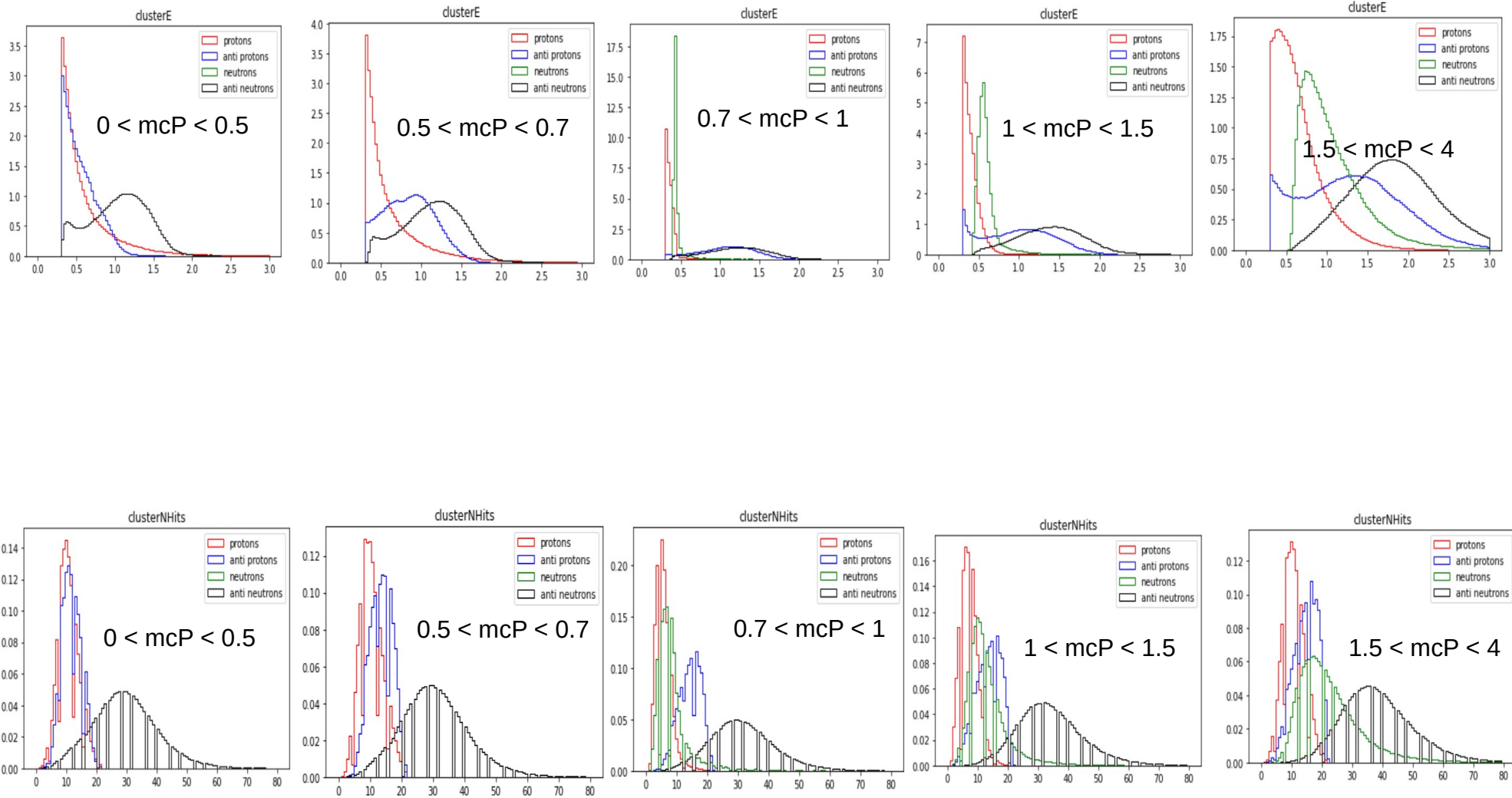
Anti-neutrons at Belle II

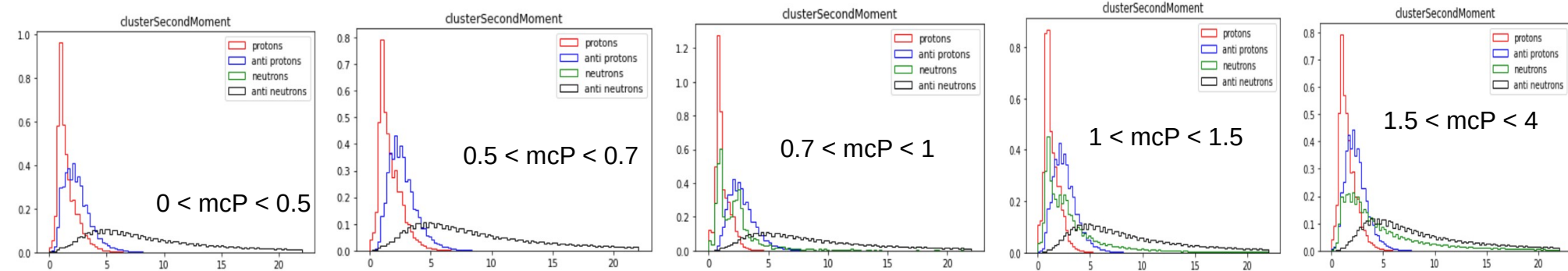
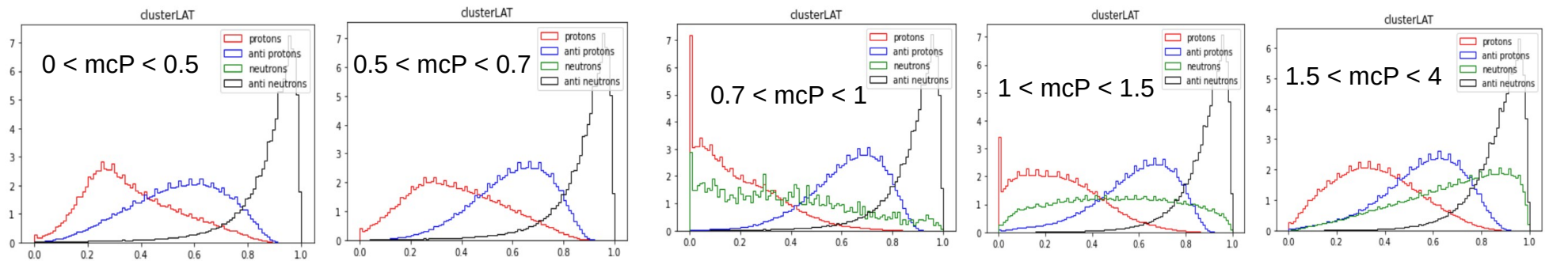
MANTRA Meeting
17/04/2025

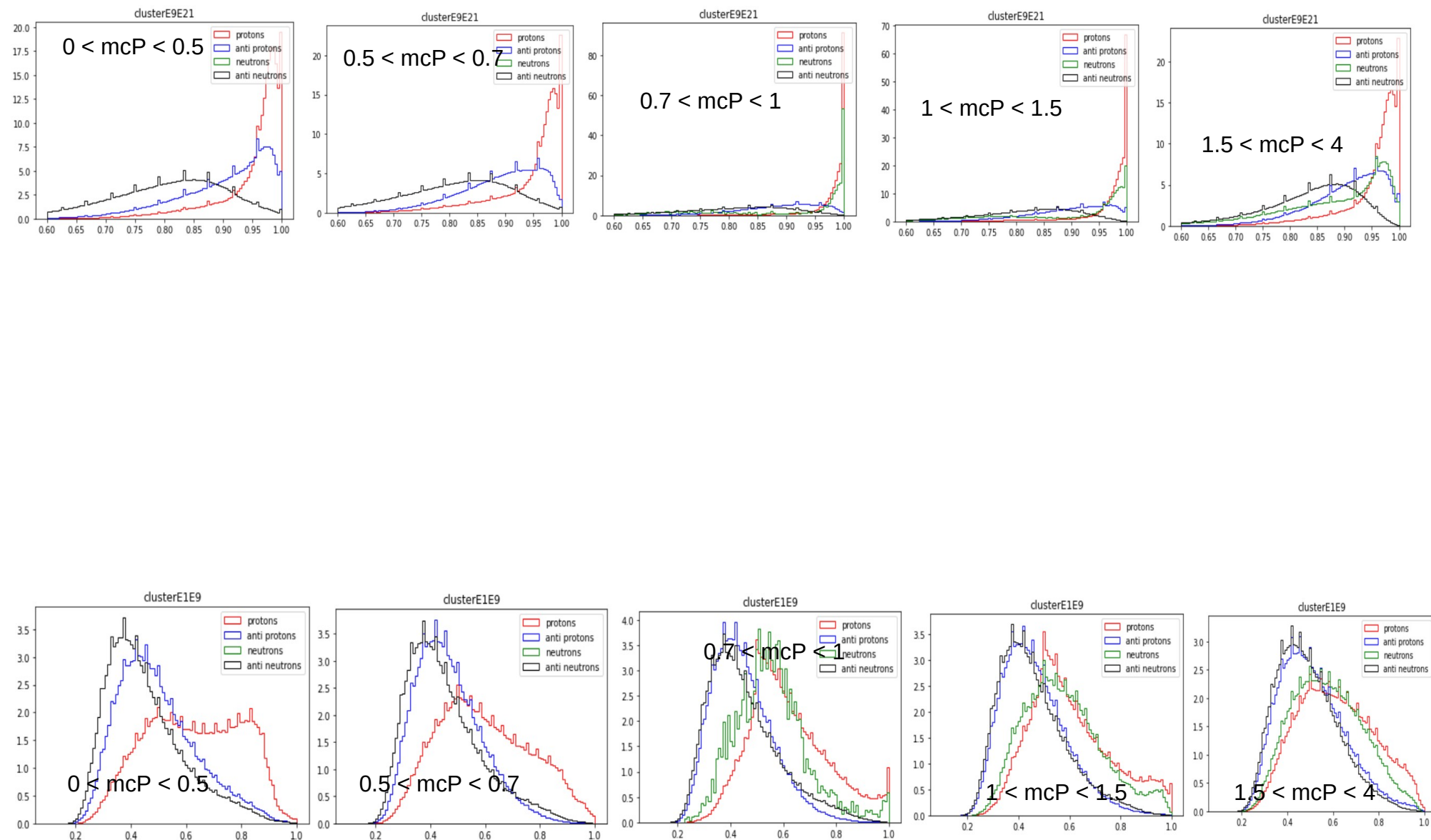
- We look for the agreement of the ECL variables for anti-neutrons and anti-protons, so that they can be used as proxies of each other.
- So far we saw that the distributions don't agree; but today we look further:
 - In bins of their respective MC momenta
 - In 5cm of the ECL

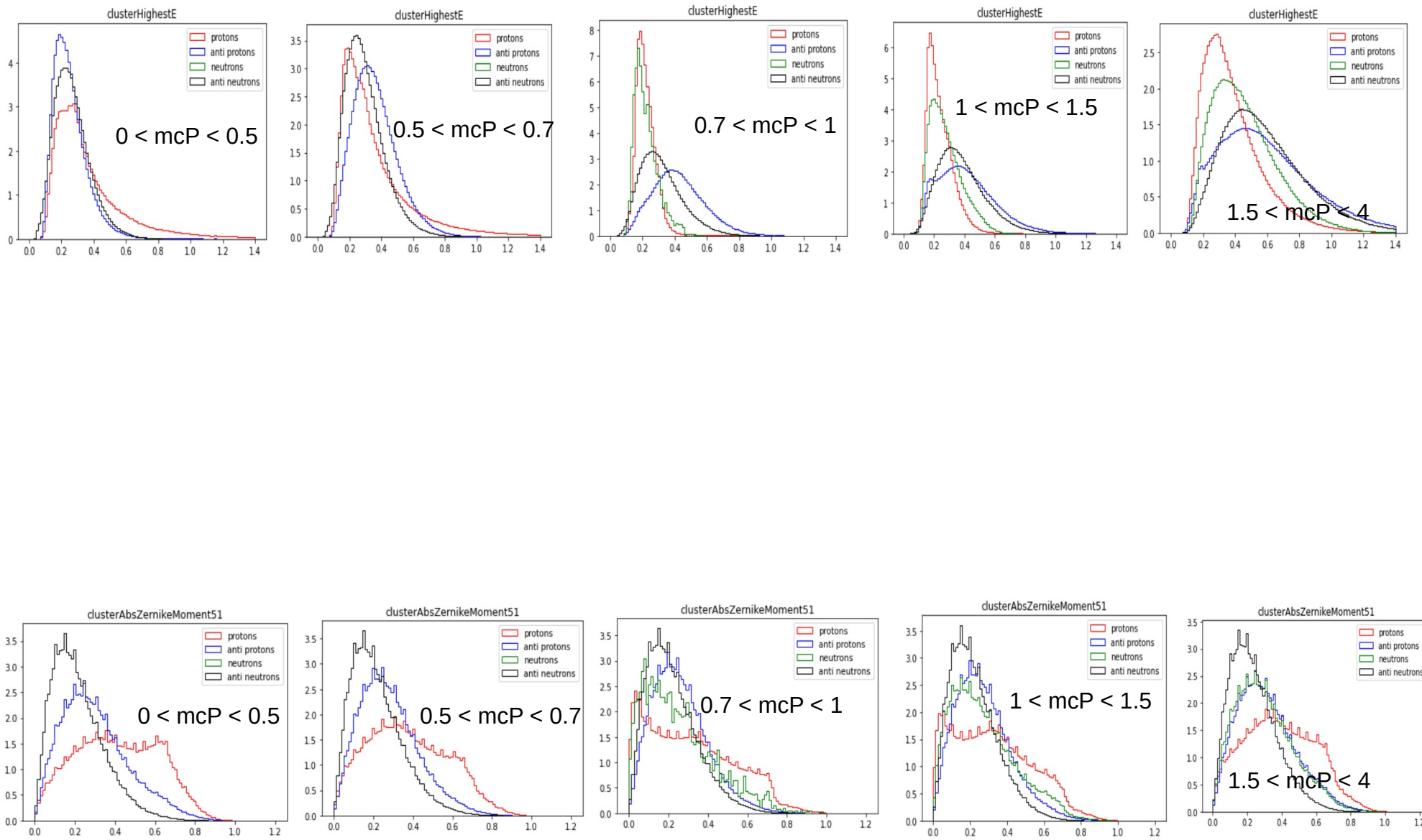
**ECL variables in bins of respective mcP
(clusterE > 0.3)**

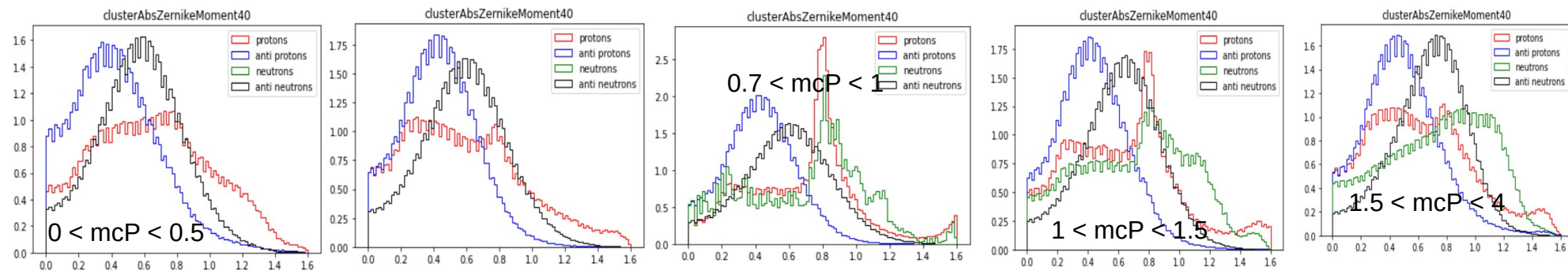




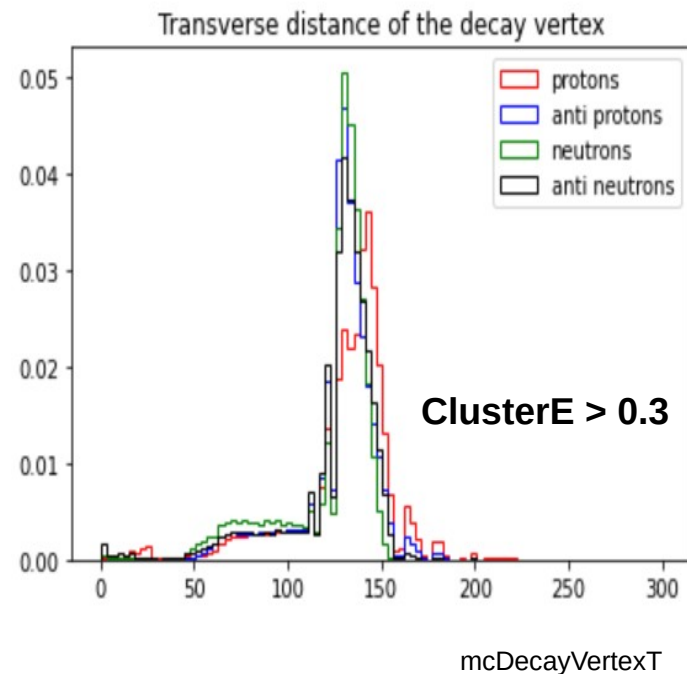
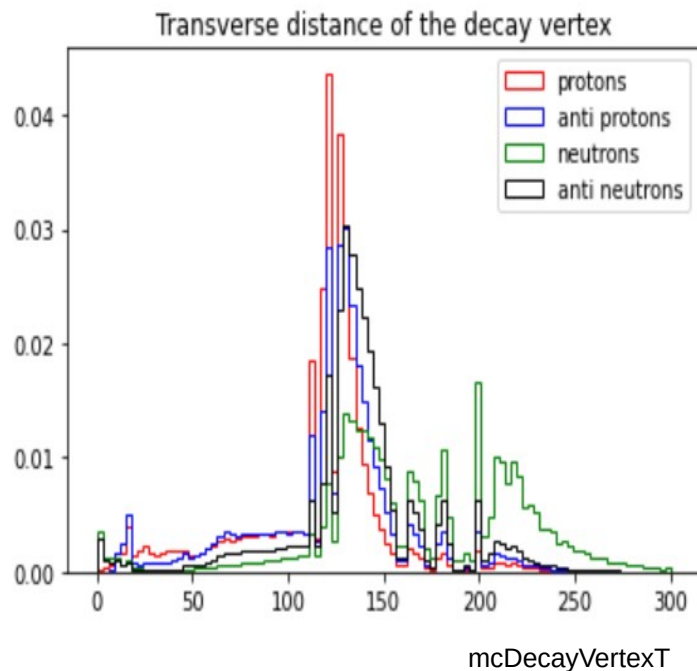








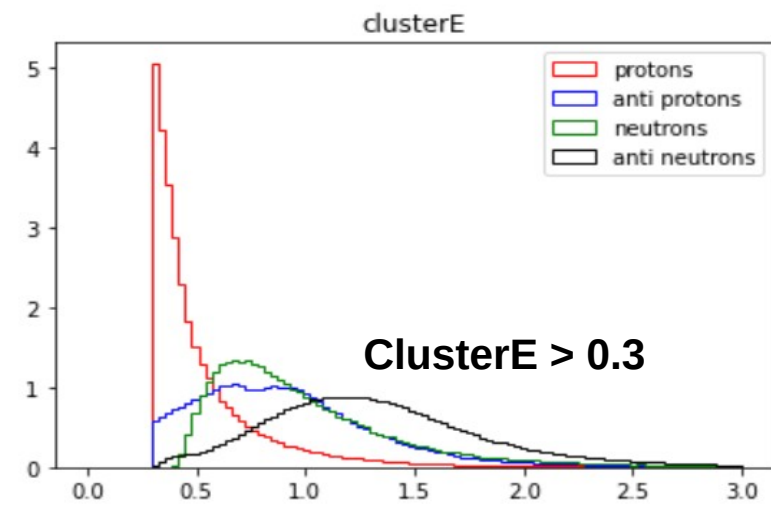
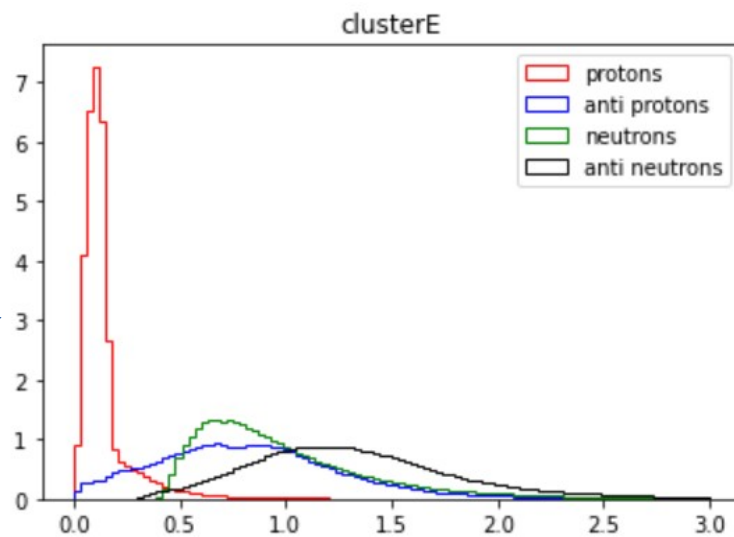
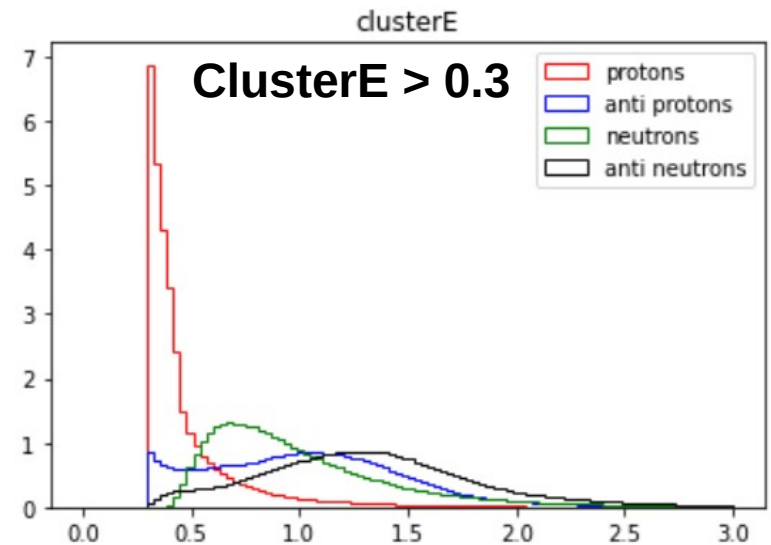
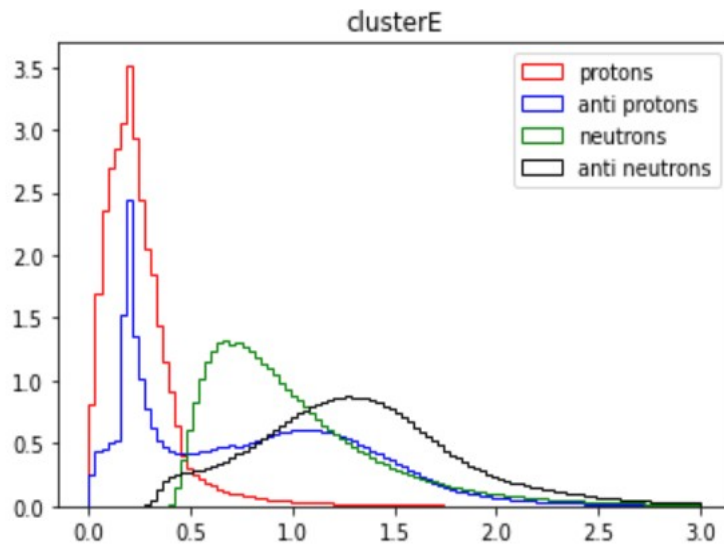
ECL variables in the ECL region [125, 130] cm



- 1st PXD layer at 1.4 cm
- 4th SVD layer at 14 cm
- CDC begins at 16 cm
- TOP begins at 118 cm
- **ECL begins at 125 cm**
- **ECL ends at 162 cm**
- KLM begins at 200 cm

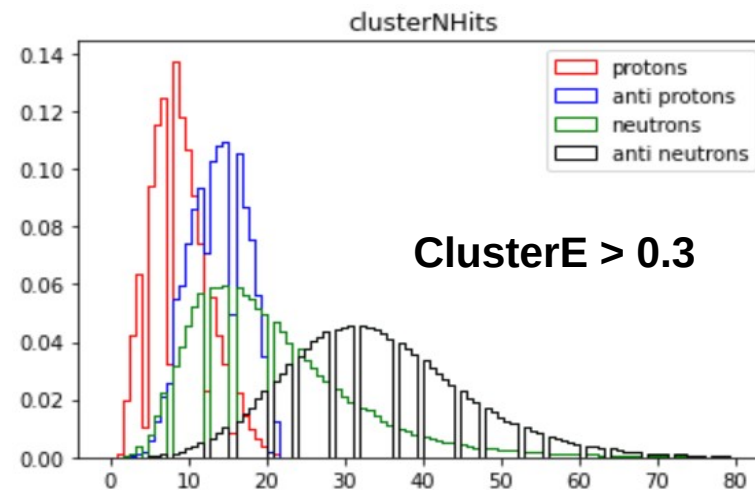
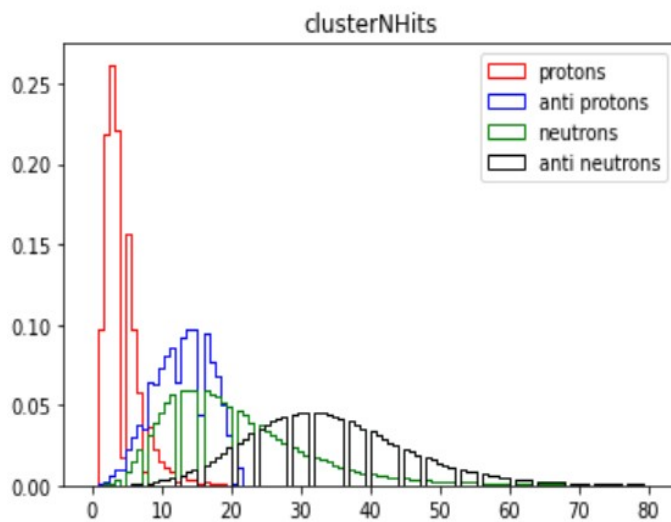
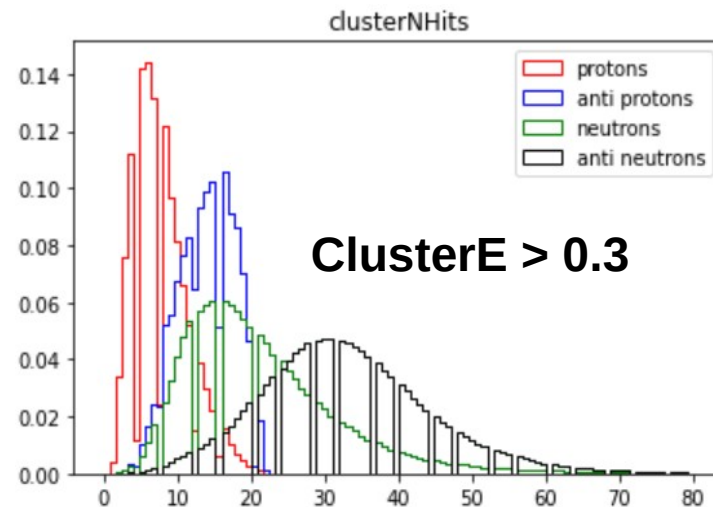
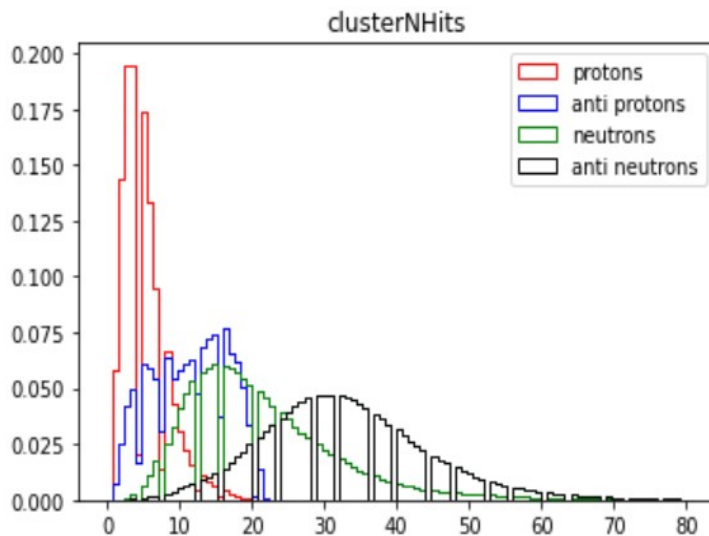
$$\text{McDecayVertexT} = \sqrt{(\text{mcDevayVertexX})^2 + (\text{mcDevayVertexY})^2}$$

DecayVertex = first point of interaction.



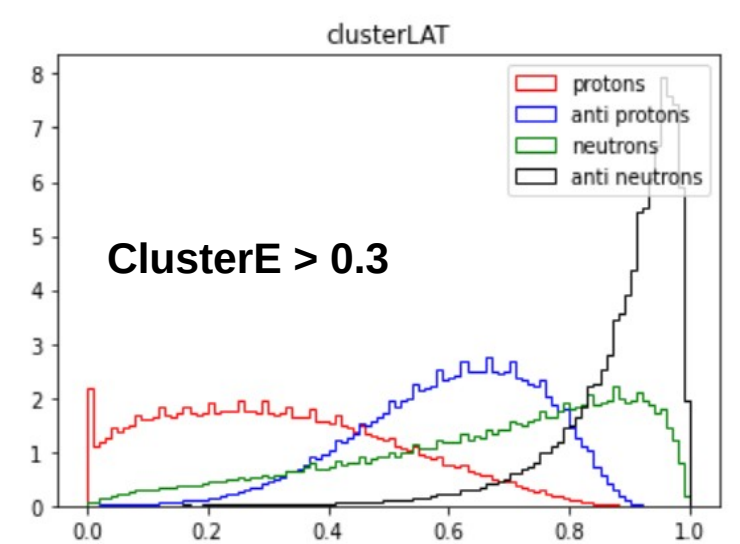
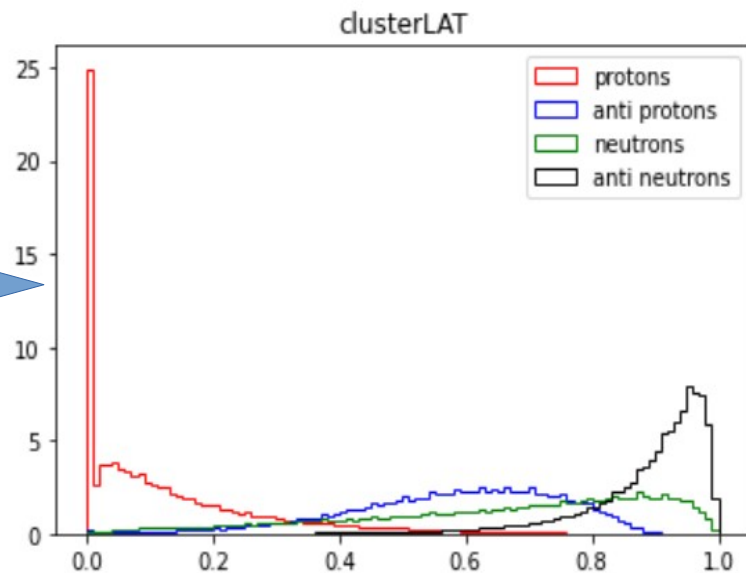
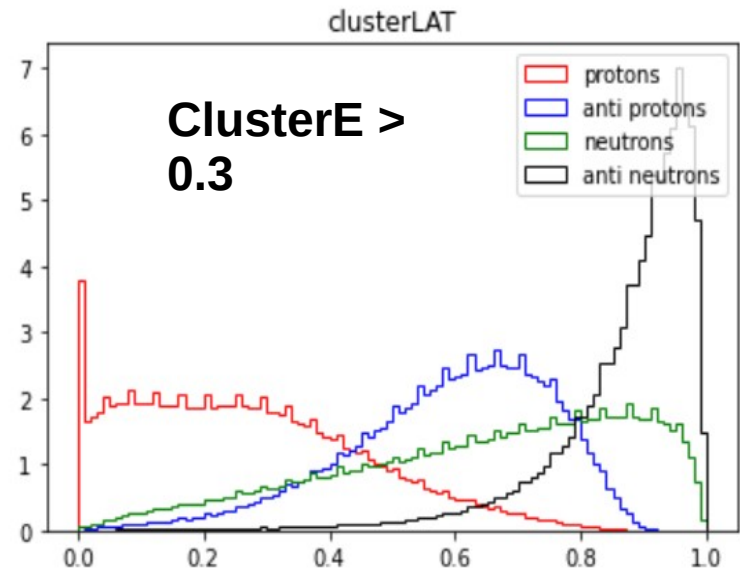
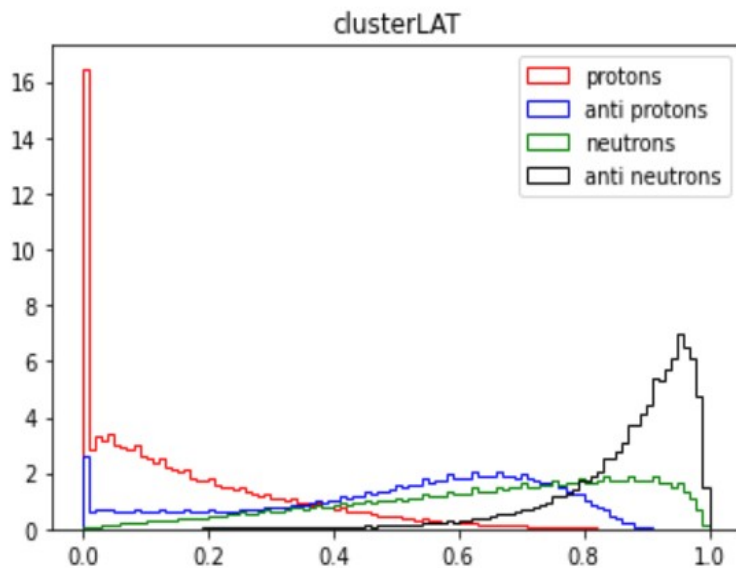
ECL region:
[125, 130] cm





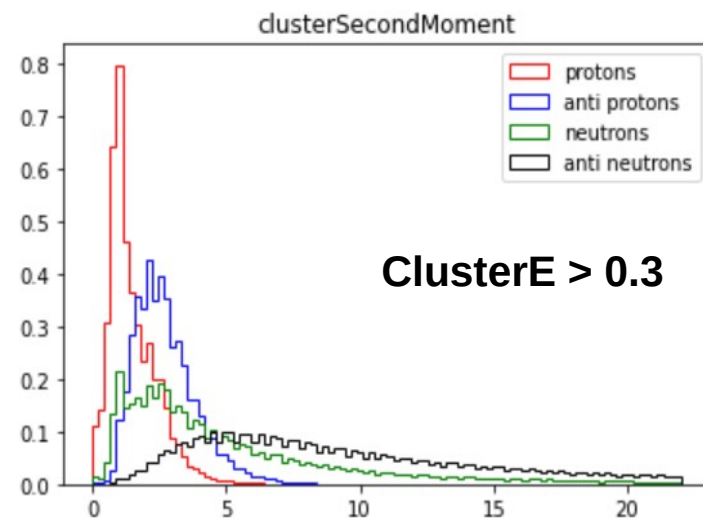
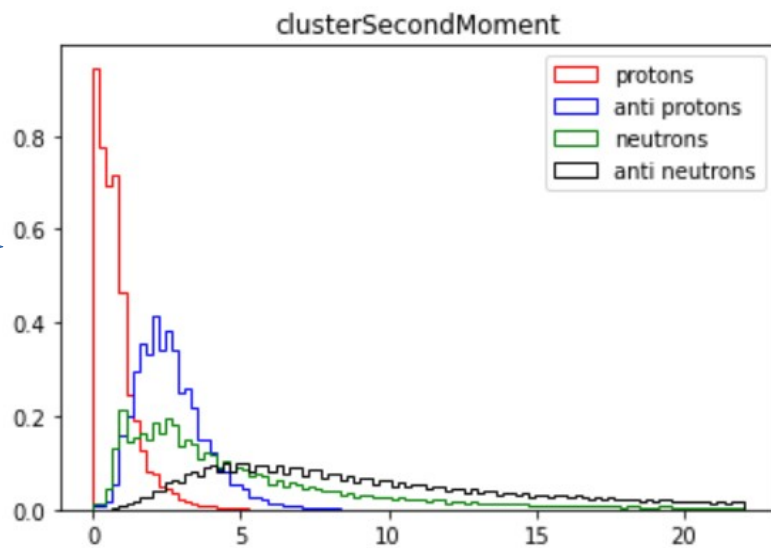
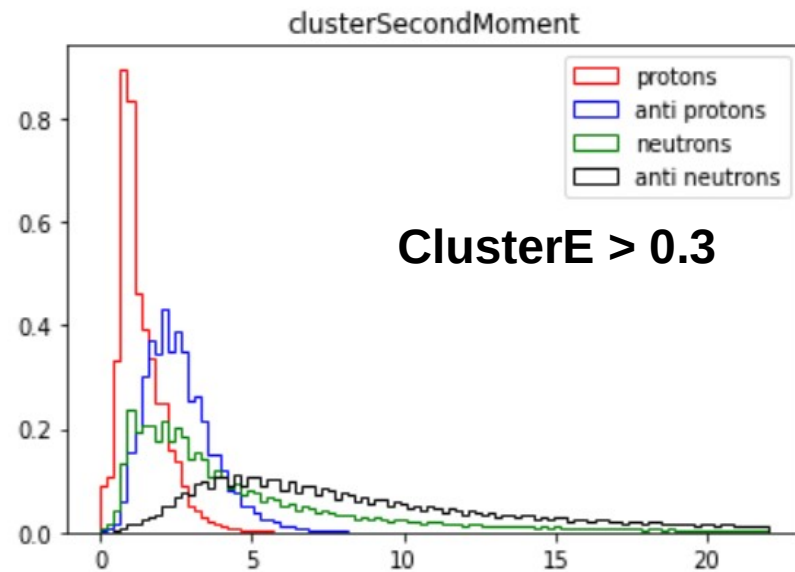
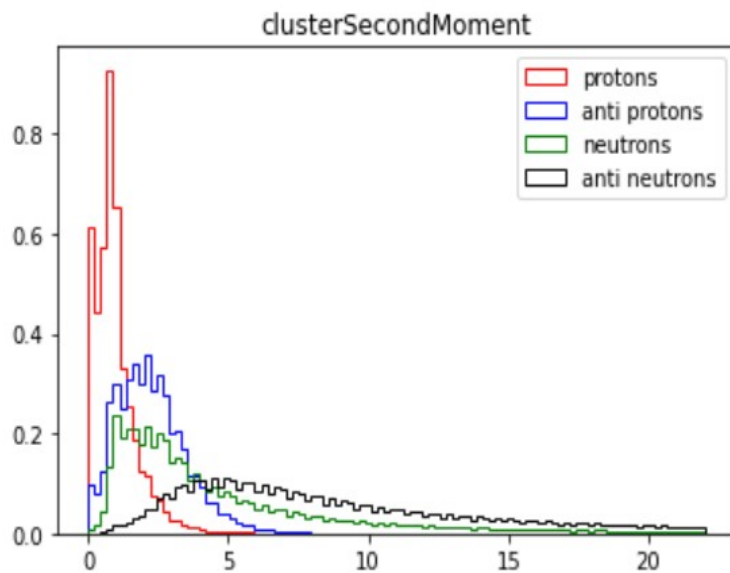
ECL region:
[125, 130] cm

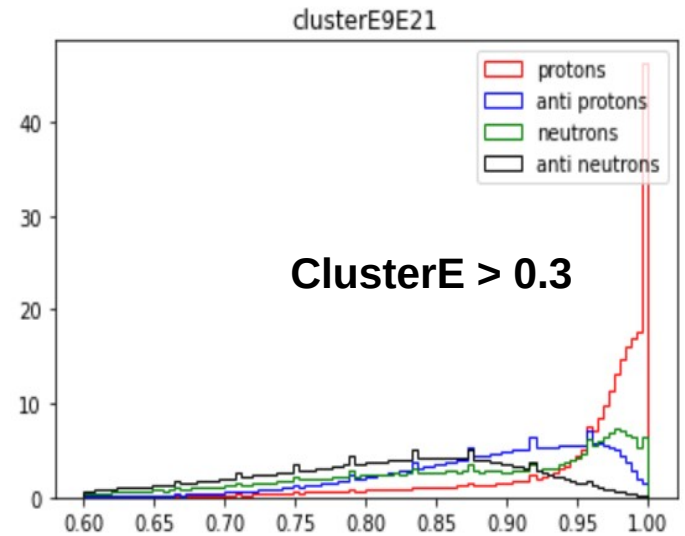
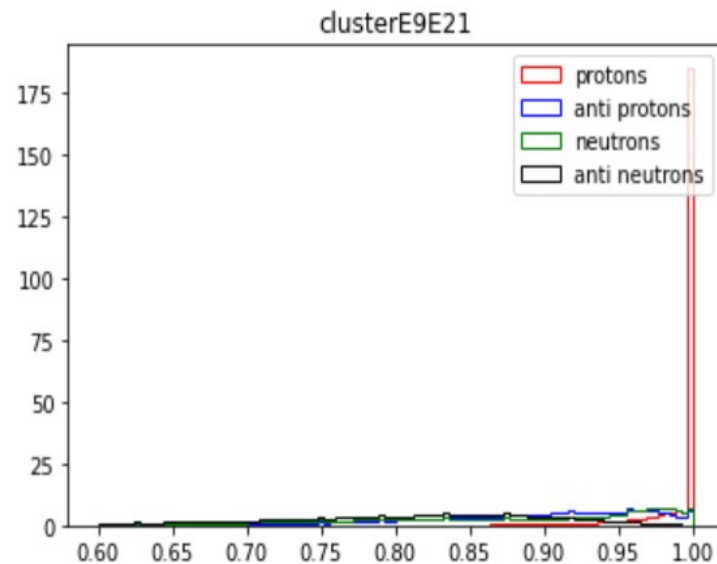
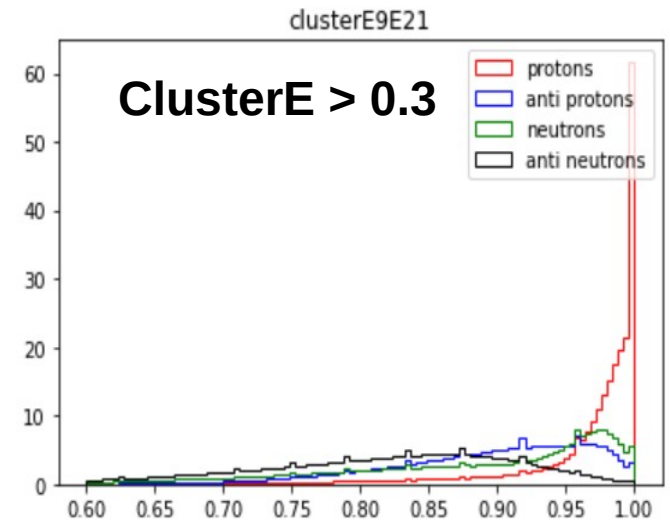
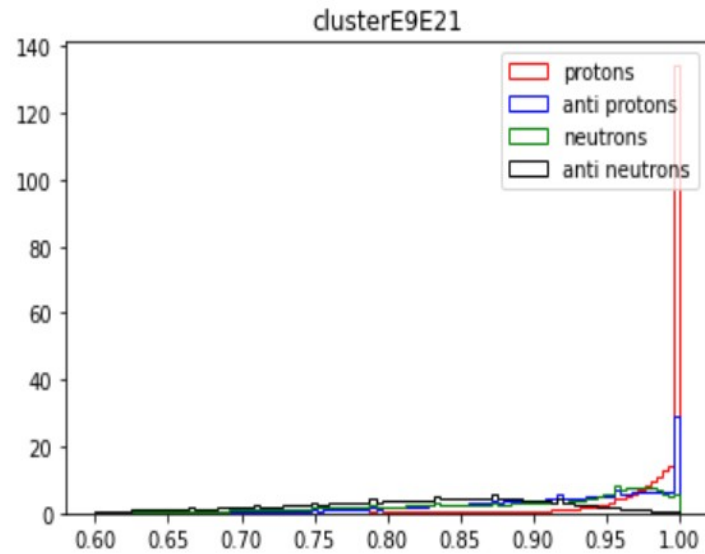




ECL region:
[125, 130] cm

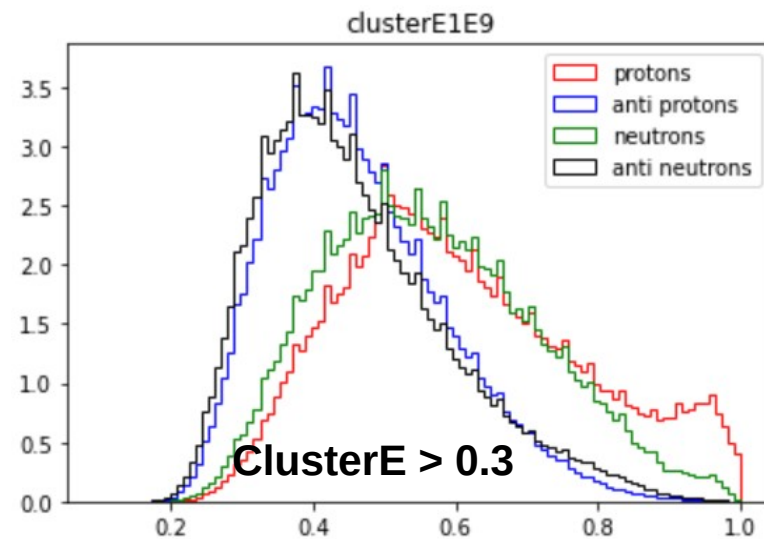
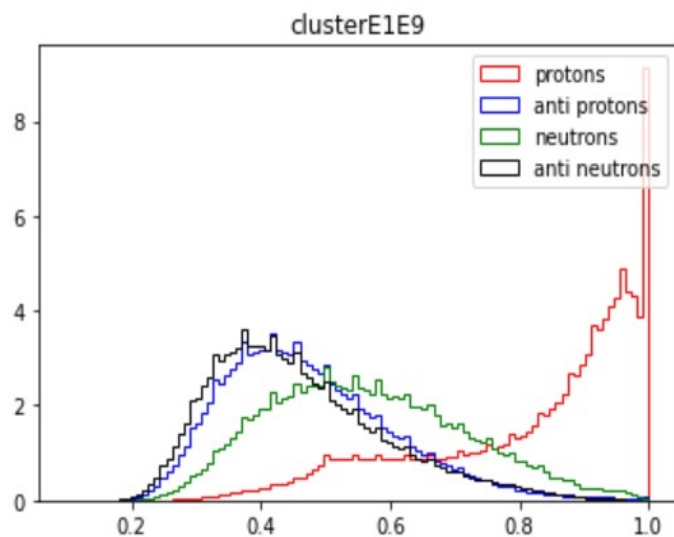
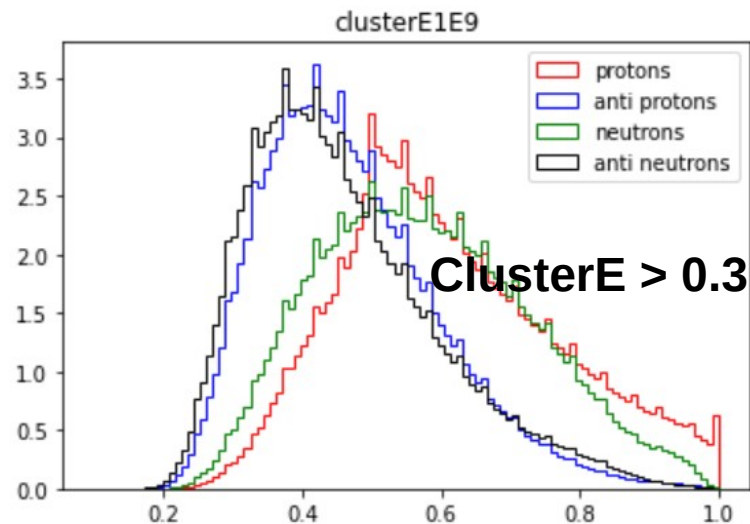
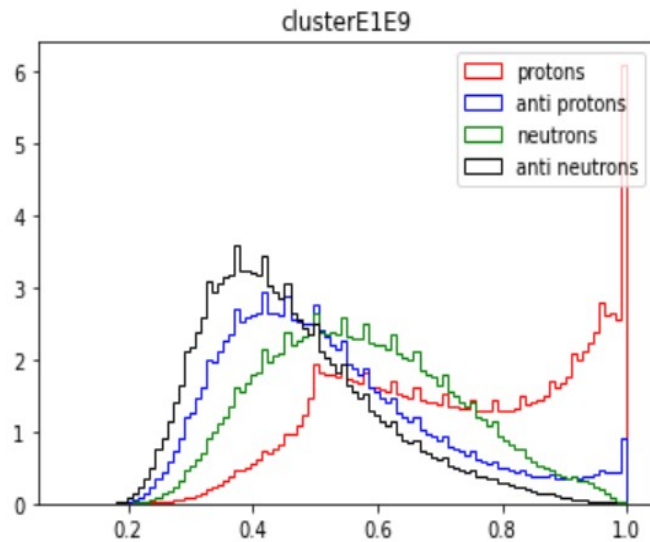






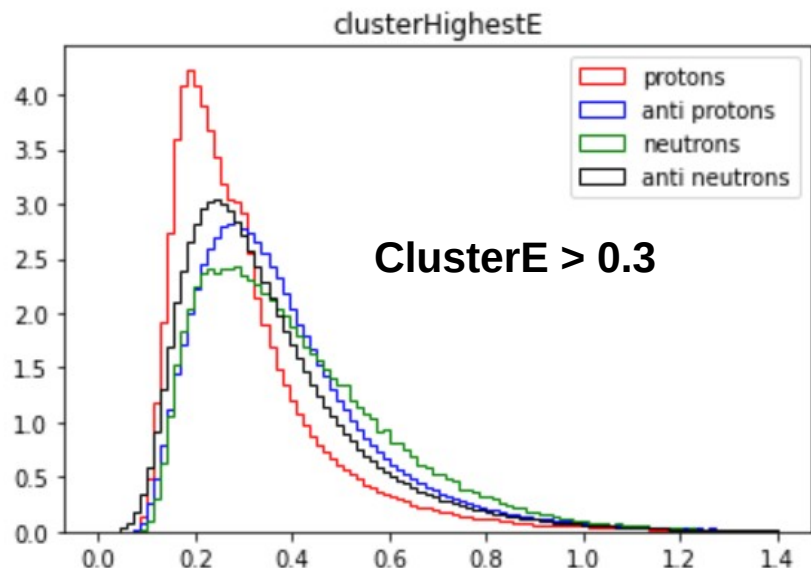
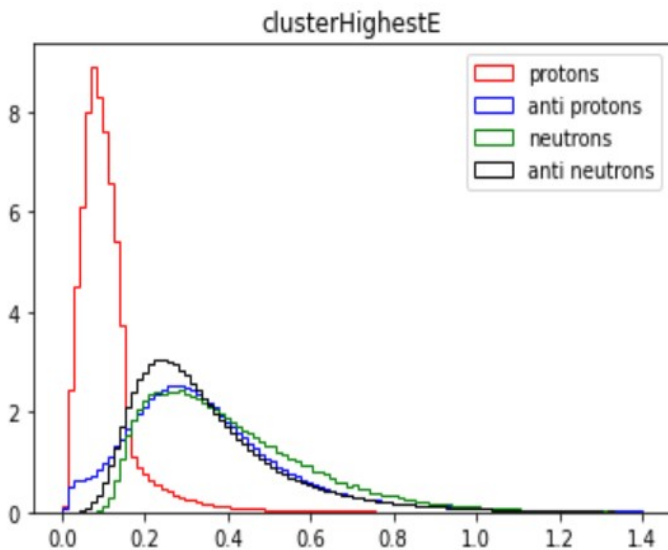
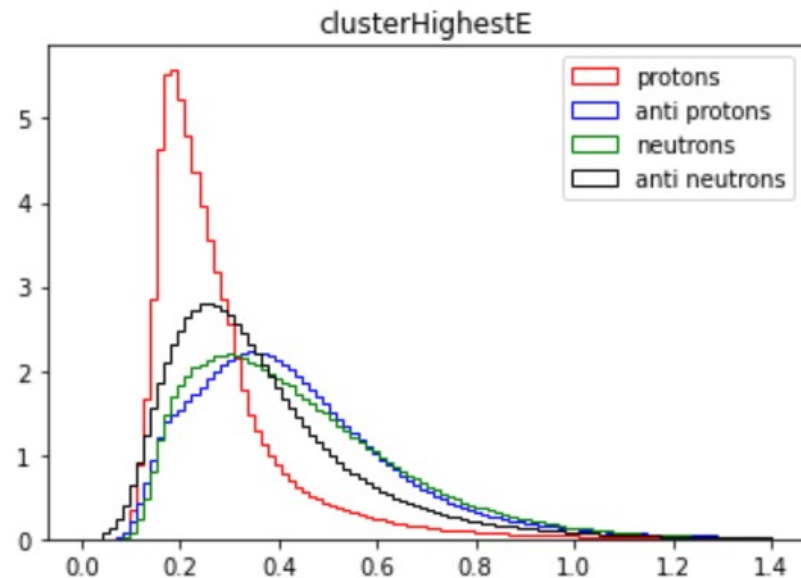
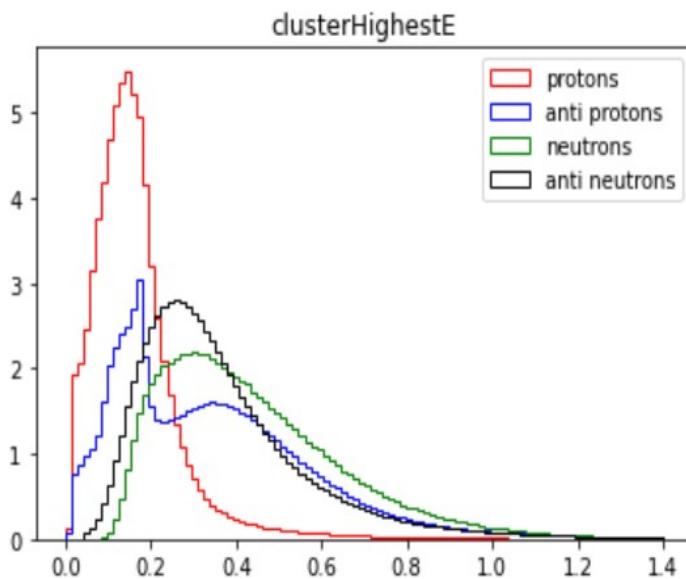
ECL region:
[125, 130] cm





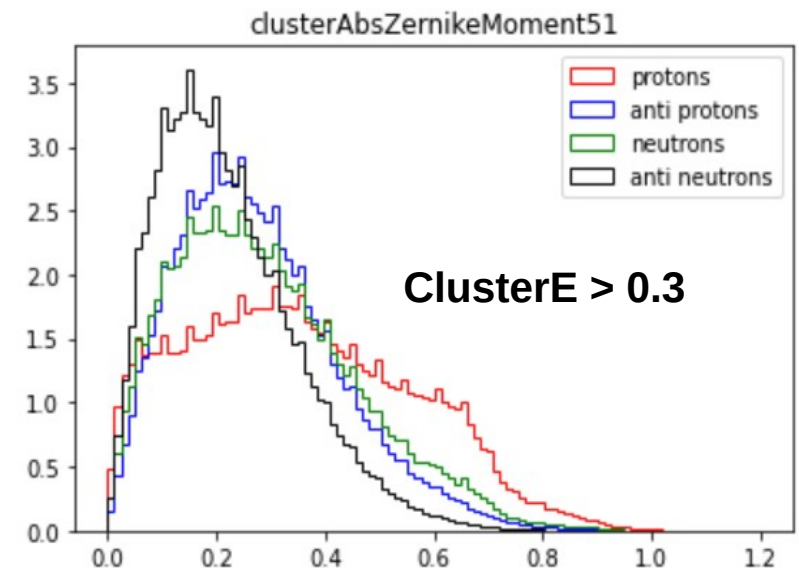
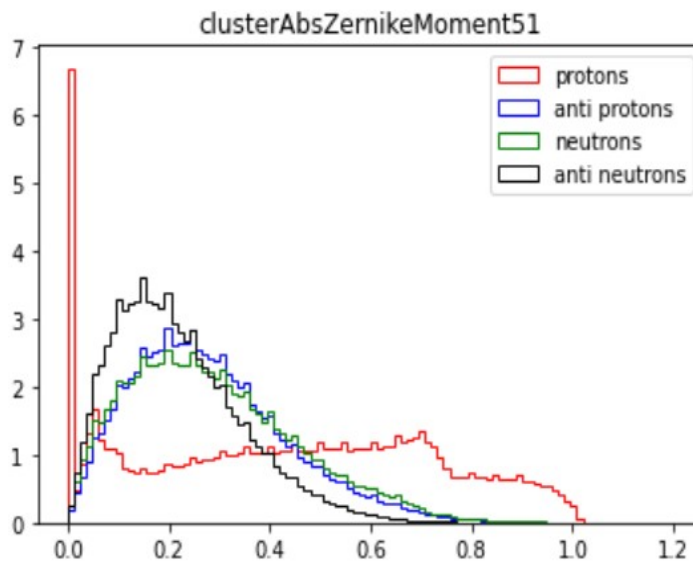
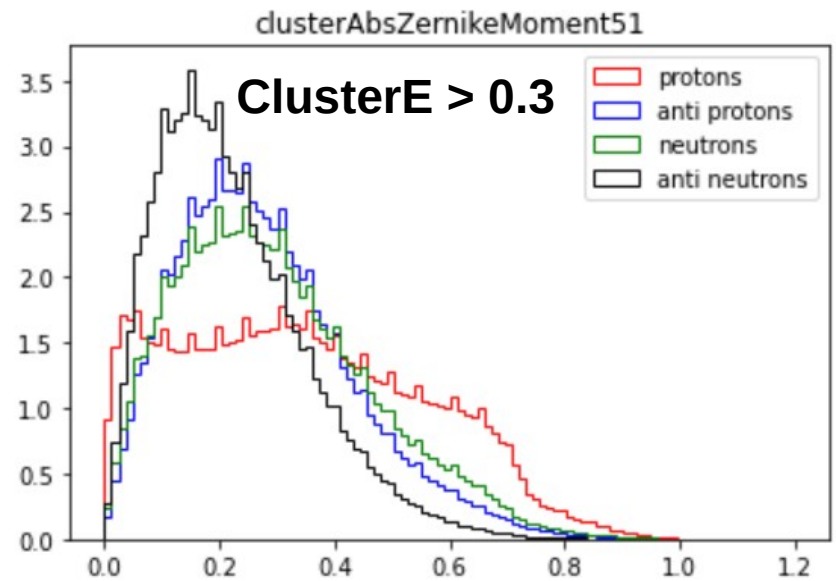
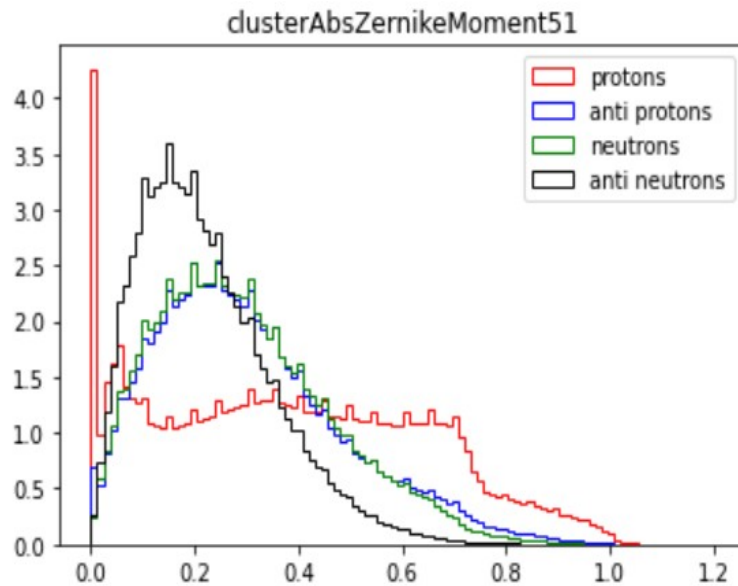
ECL region:
[125, 130] cm





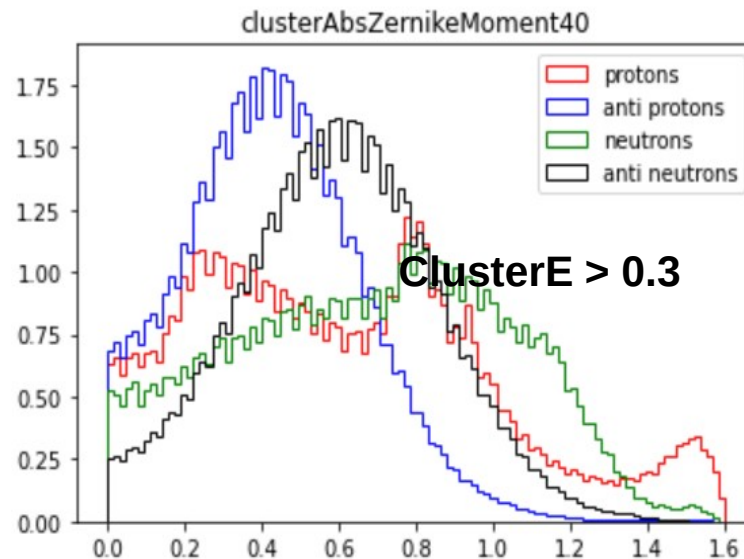
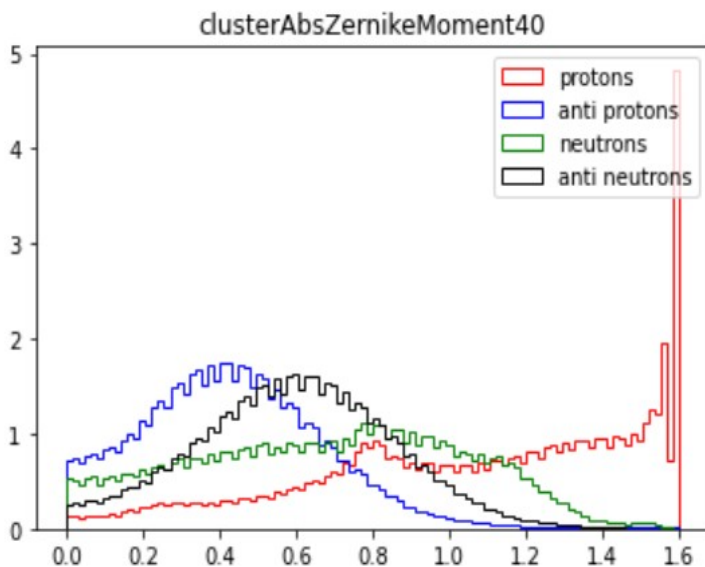
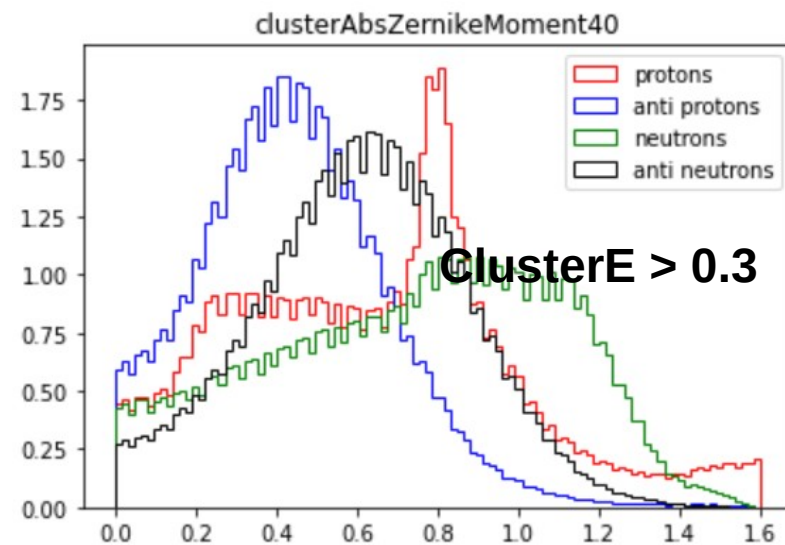
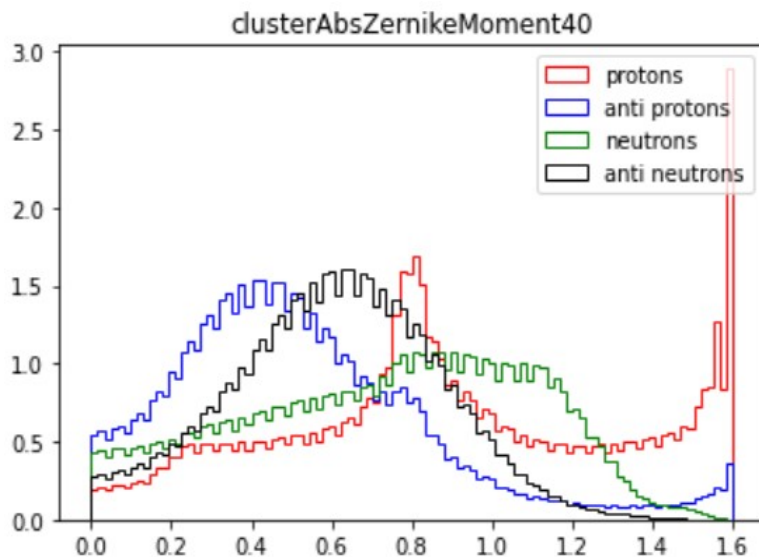
ECL region:
[125, 130] cm





ECL region:
[125, 130] cm



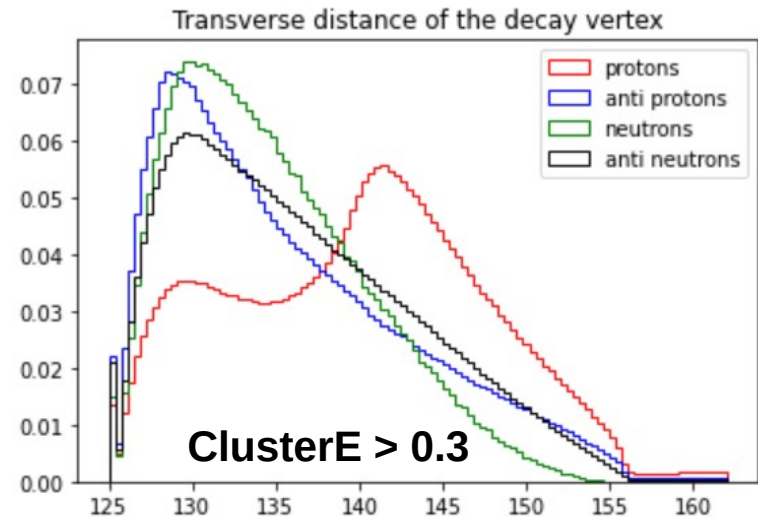
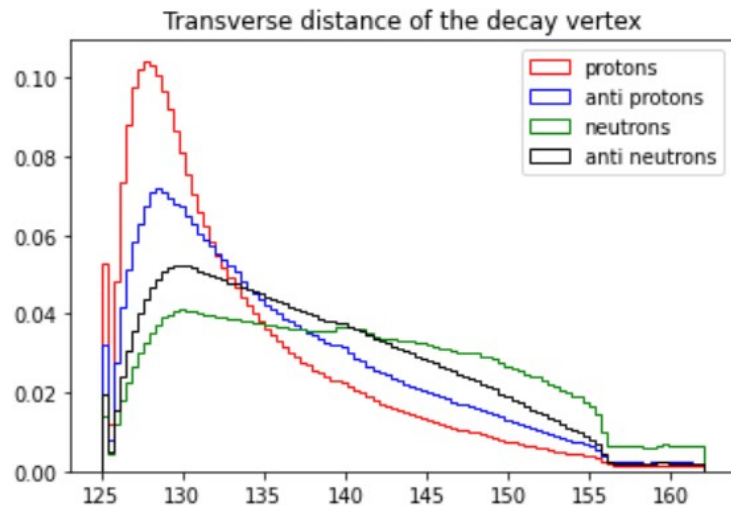


ECL region:
[125, 130] cm

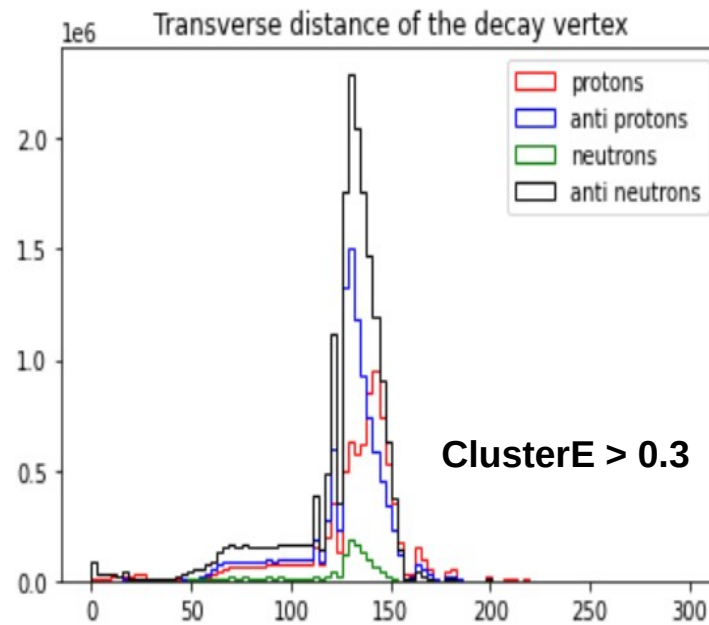
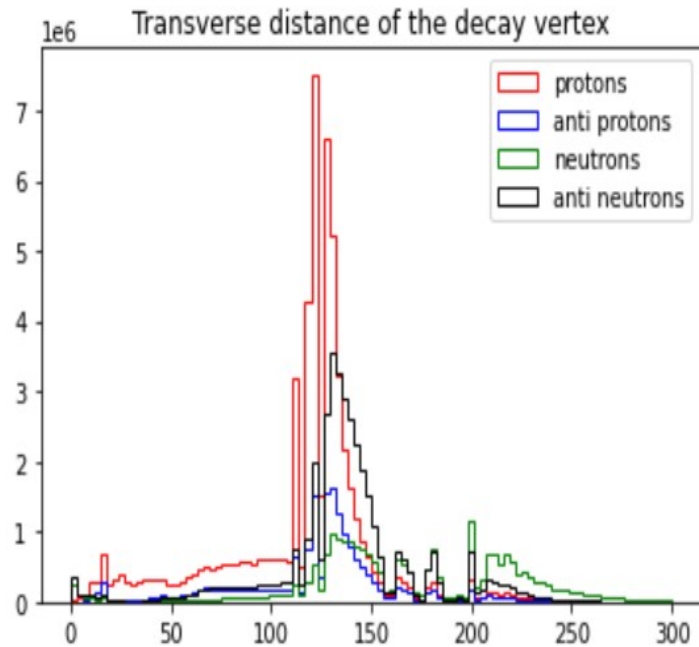


Backup Slides

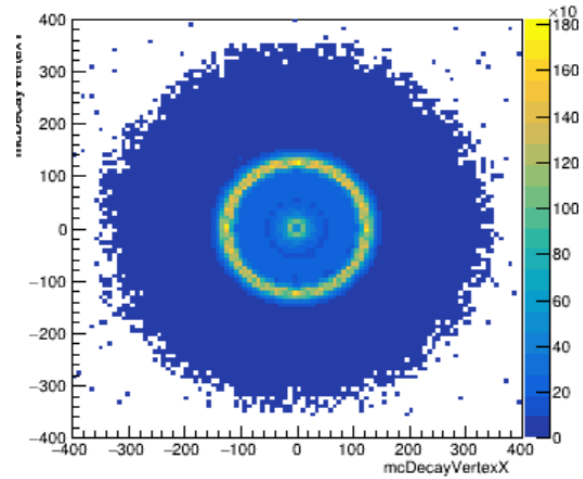
Zooming in to the complete ECL range (normalized):



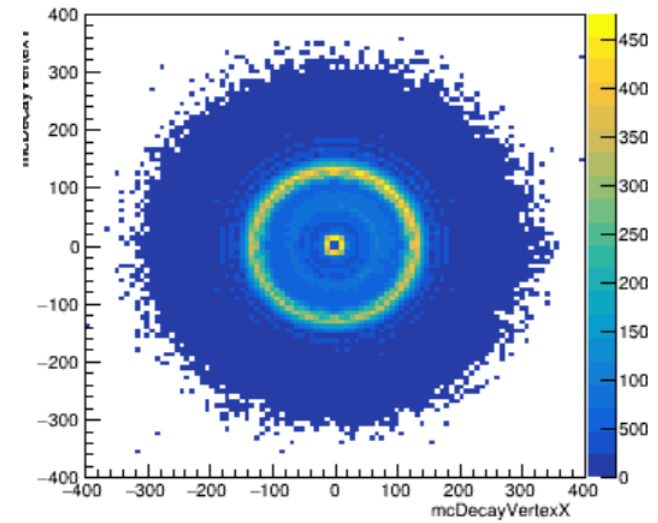
Without Normalization



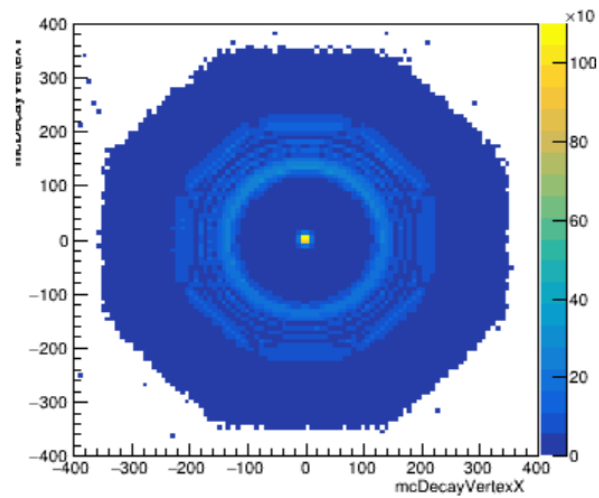
protons



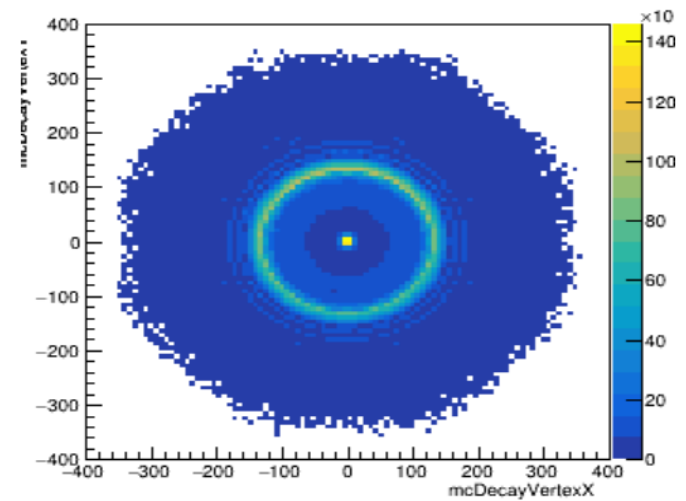
anti-protons



neutrons

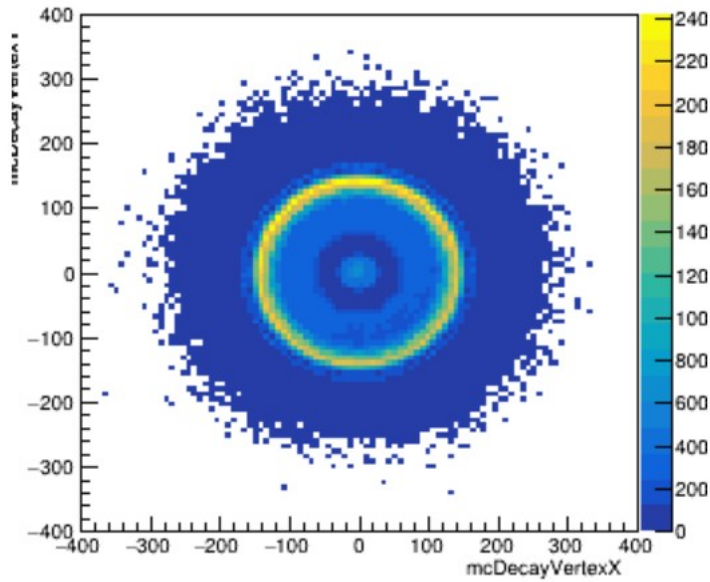


anti-neutrons

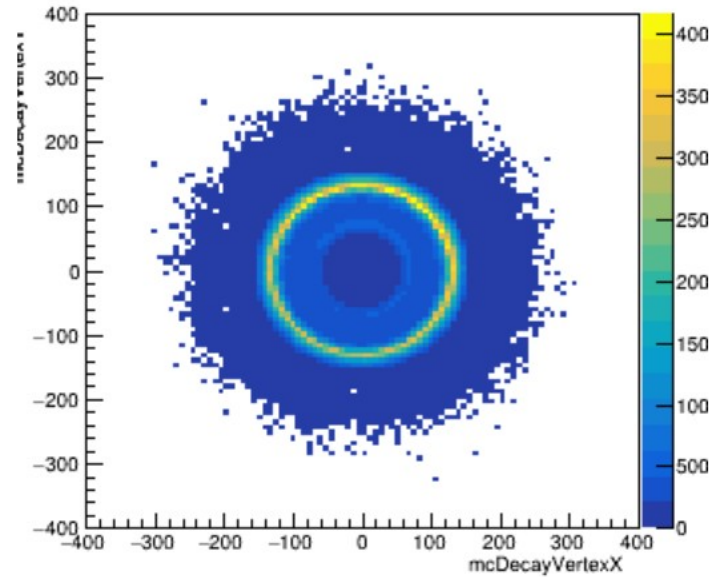


ClusterE > 0.3

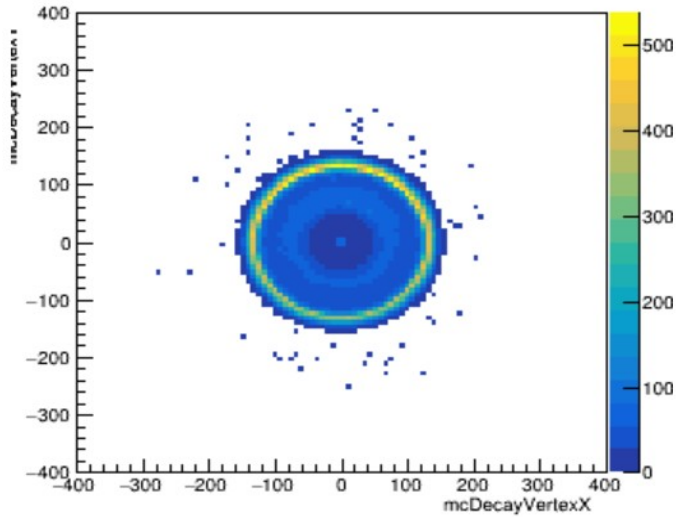
protons



anti-protons



neutrons



anti-neutrons

