

Anti-neutrons at Belle II

MANTRA Meeting
09/06/2025

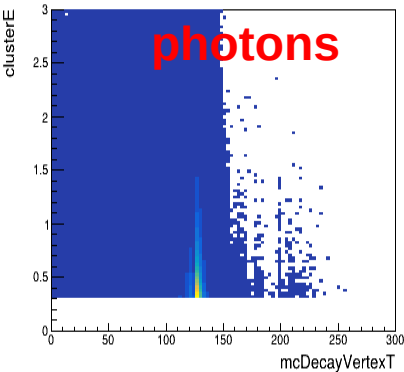
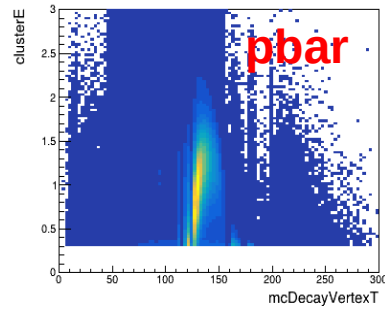
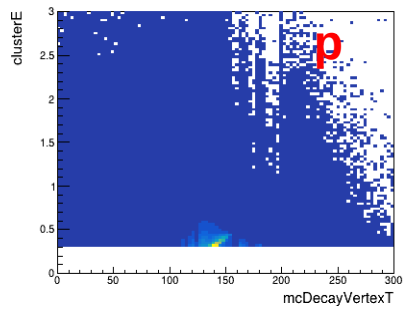
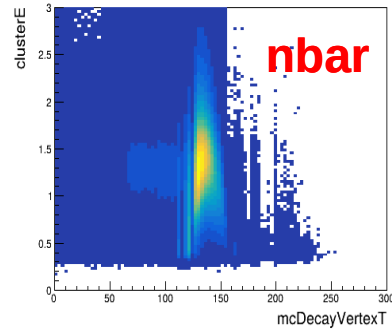
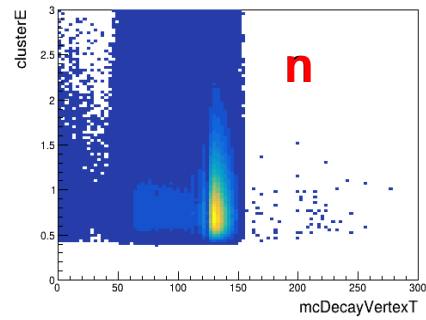
Recap:

- Shower shape variables for anti-protons and anti-neutrons are different.

Today:

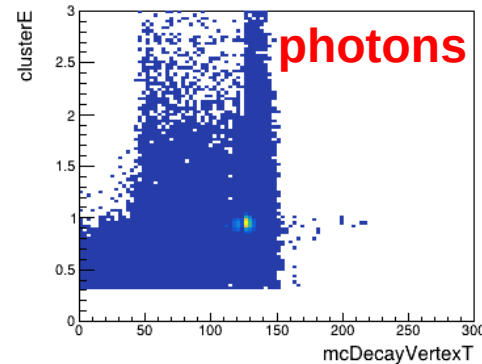
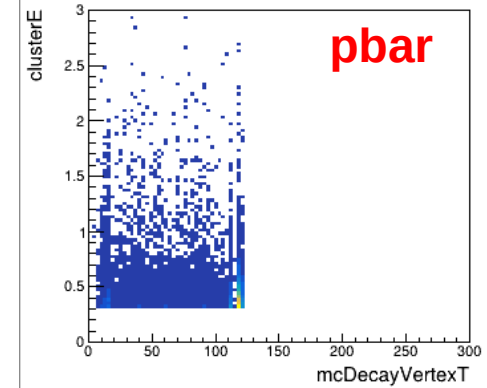
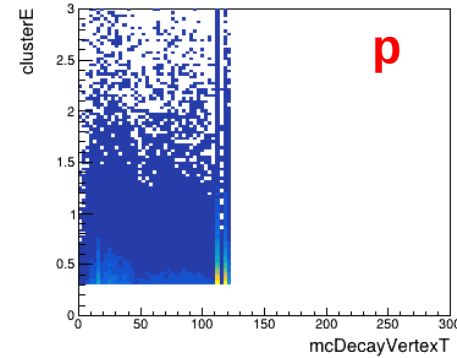
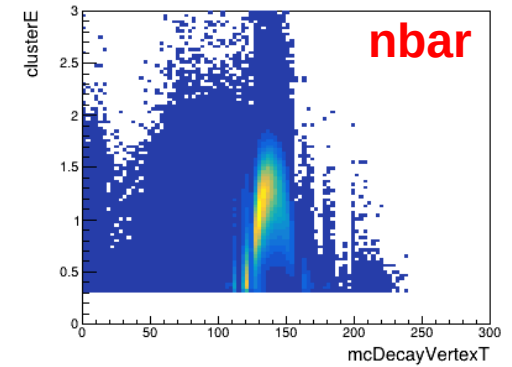
- Check for correlation between the shower variables and mcDecayVertex.

Cluster Energy v/s mcDecayVertexT

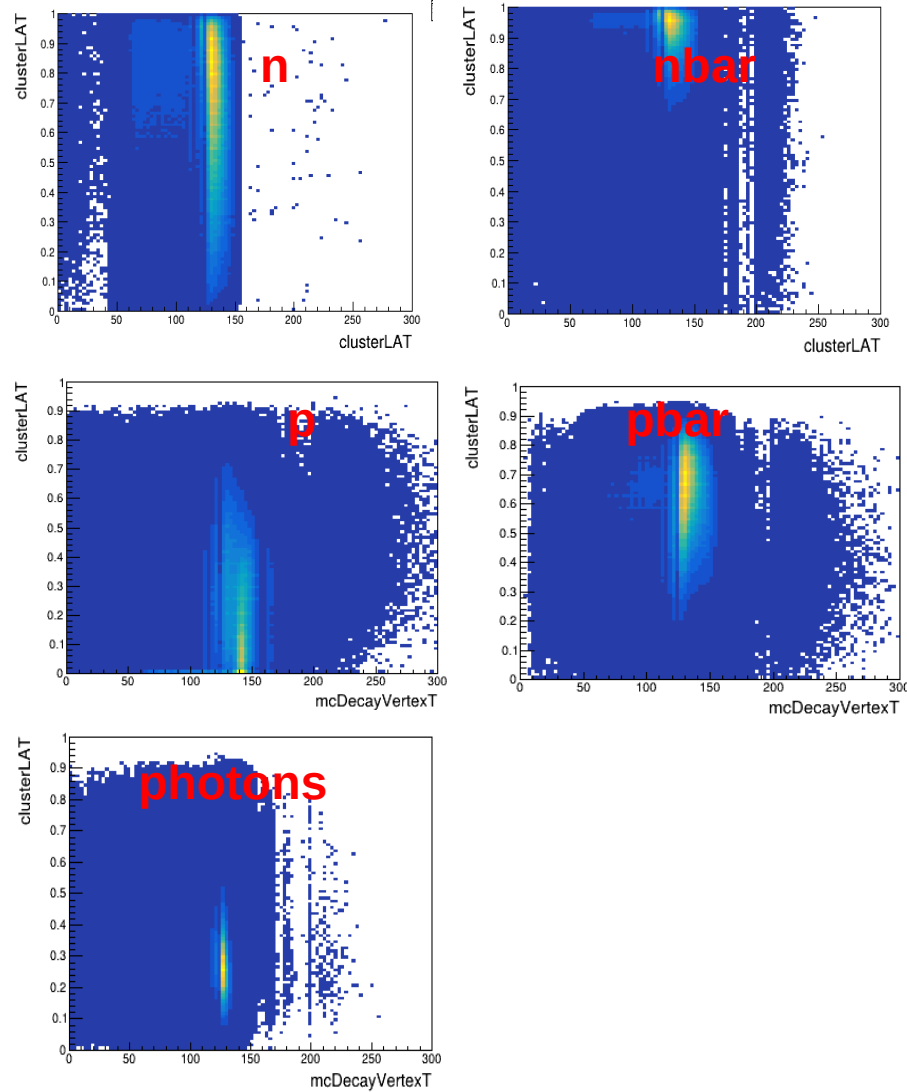


$0.9 < mcE < 1 \text{ GeV}$

No neutrons in
this energy range

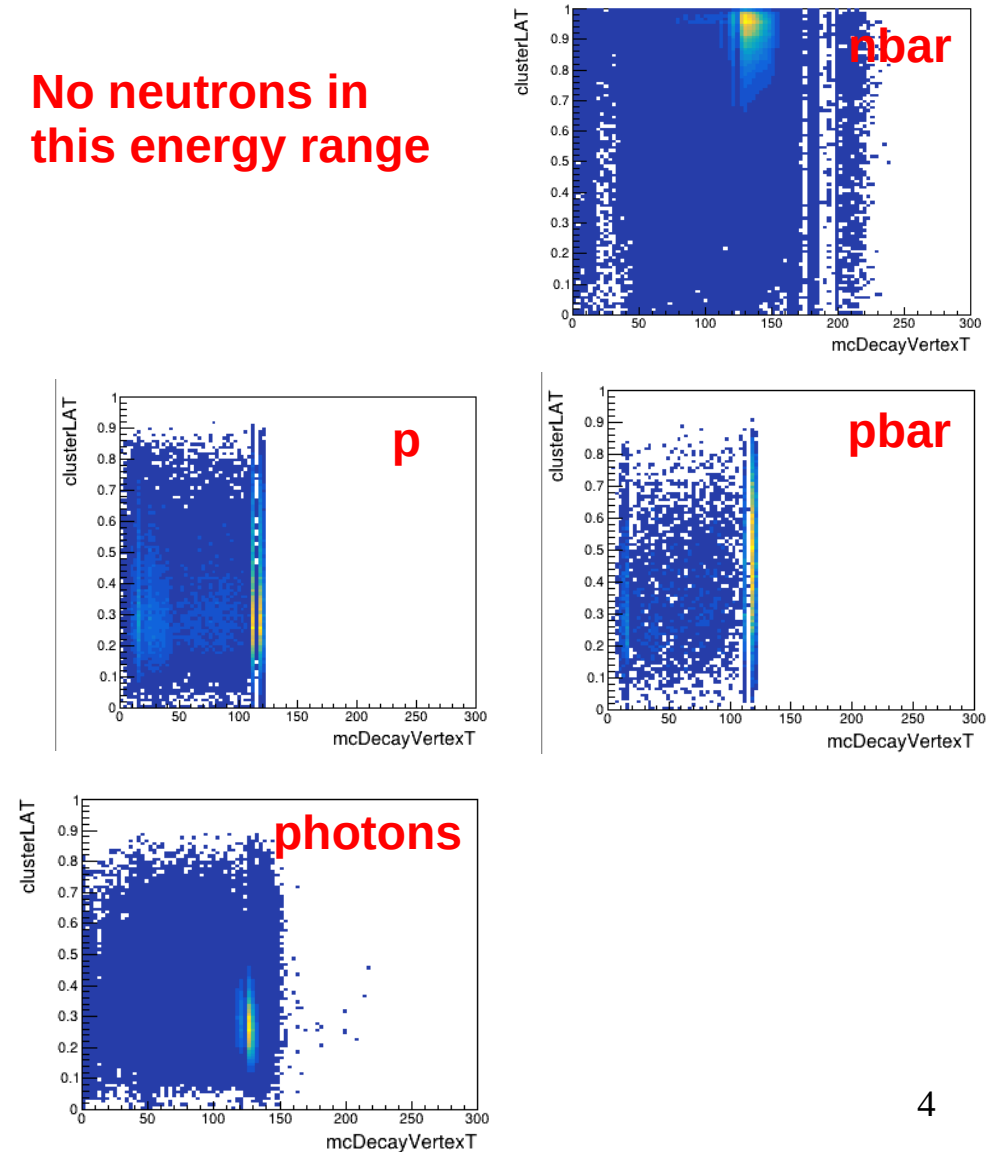


ClusterLAT v/s mcDecayVertexT



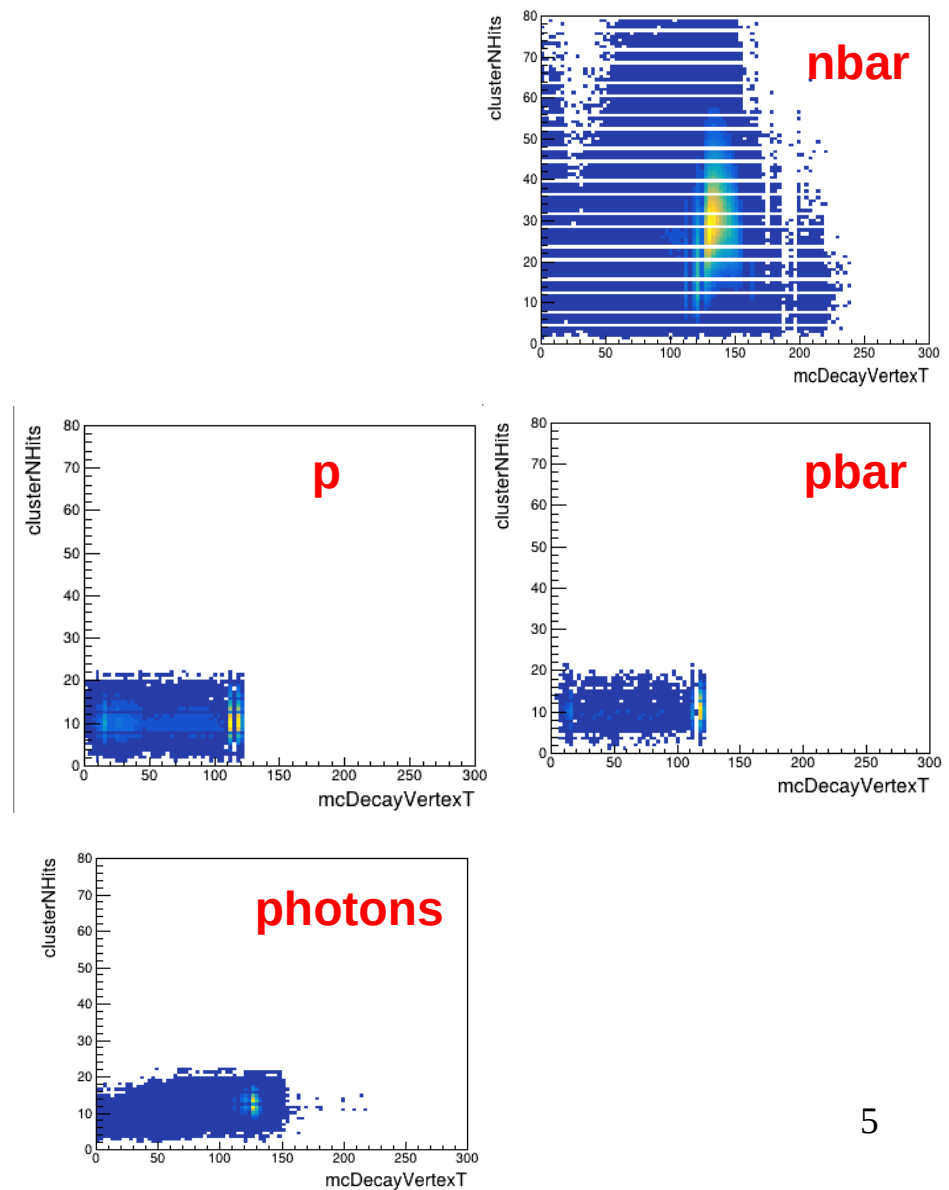
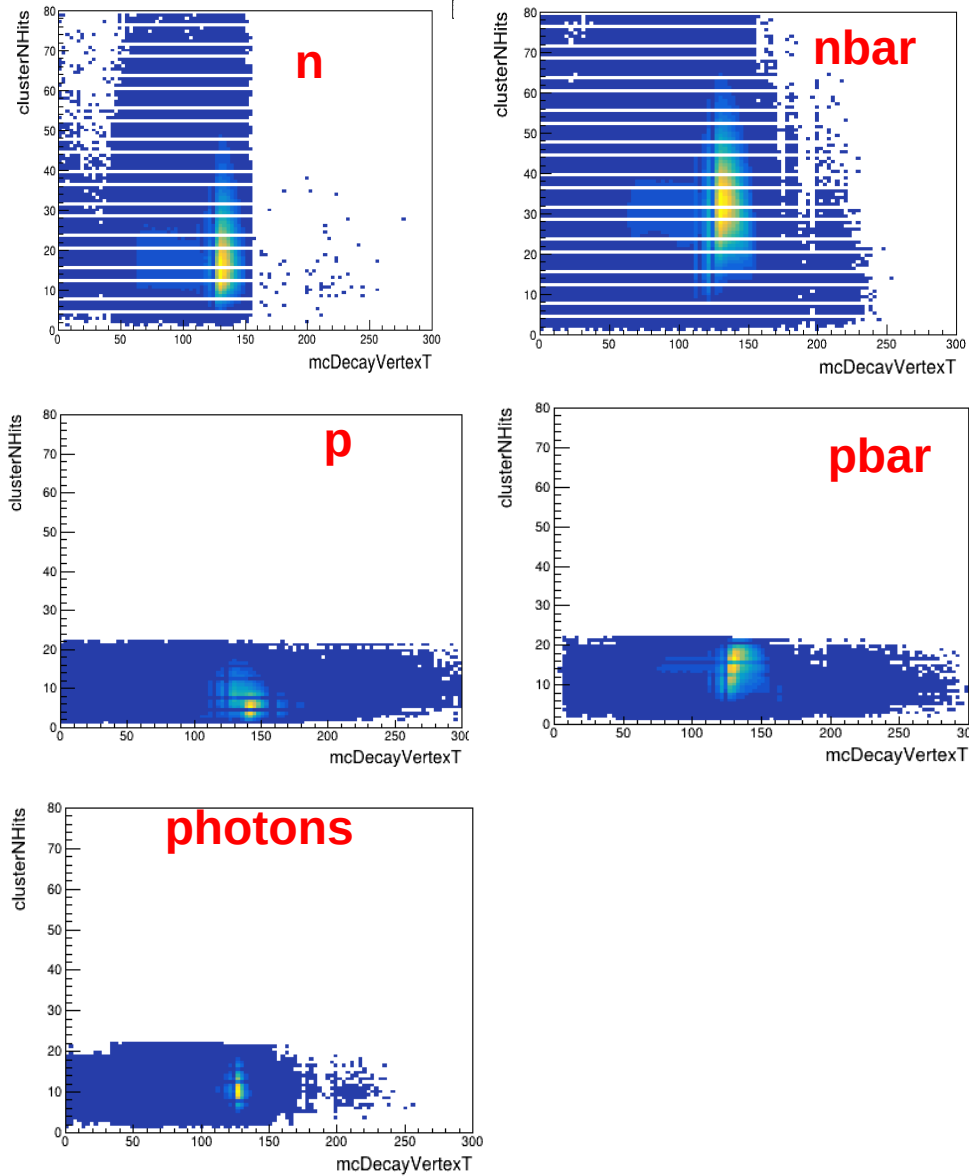
$0.9 < mcE < 1 \text{ GeV}$

No neutrons in
this energy range



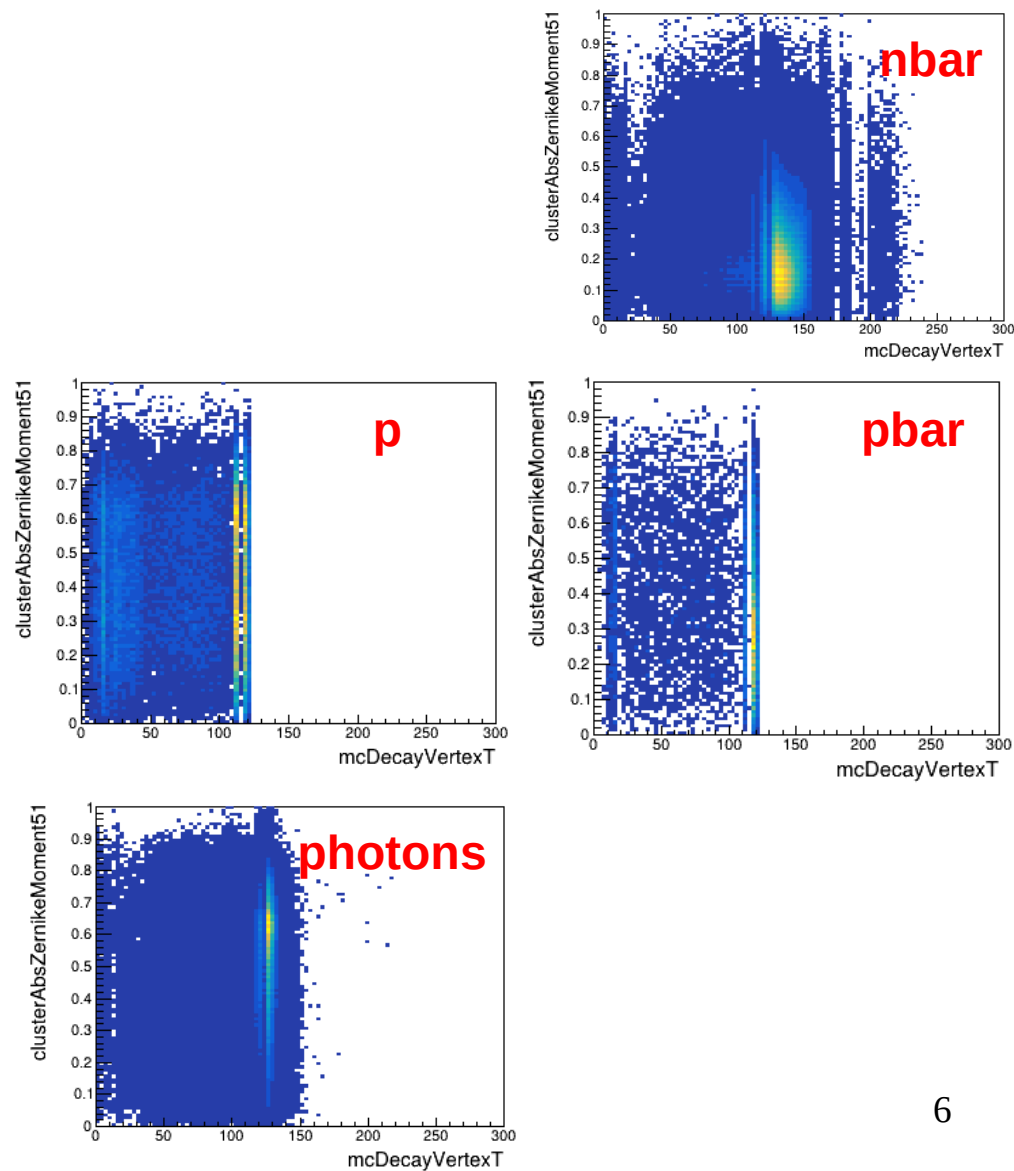
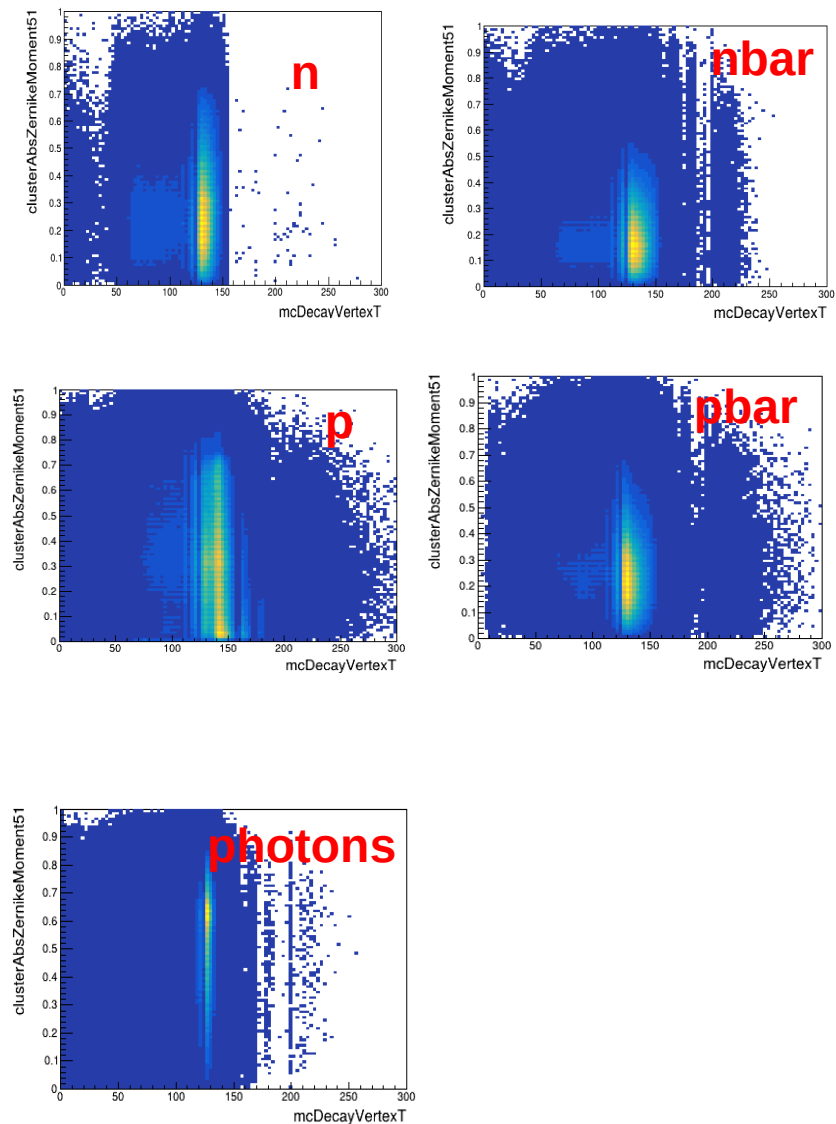
clusterNHits v/s mcDecayVertexT

$0.9 < \text{mcE} < 1 \text{ GeV}$

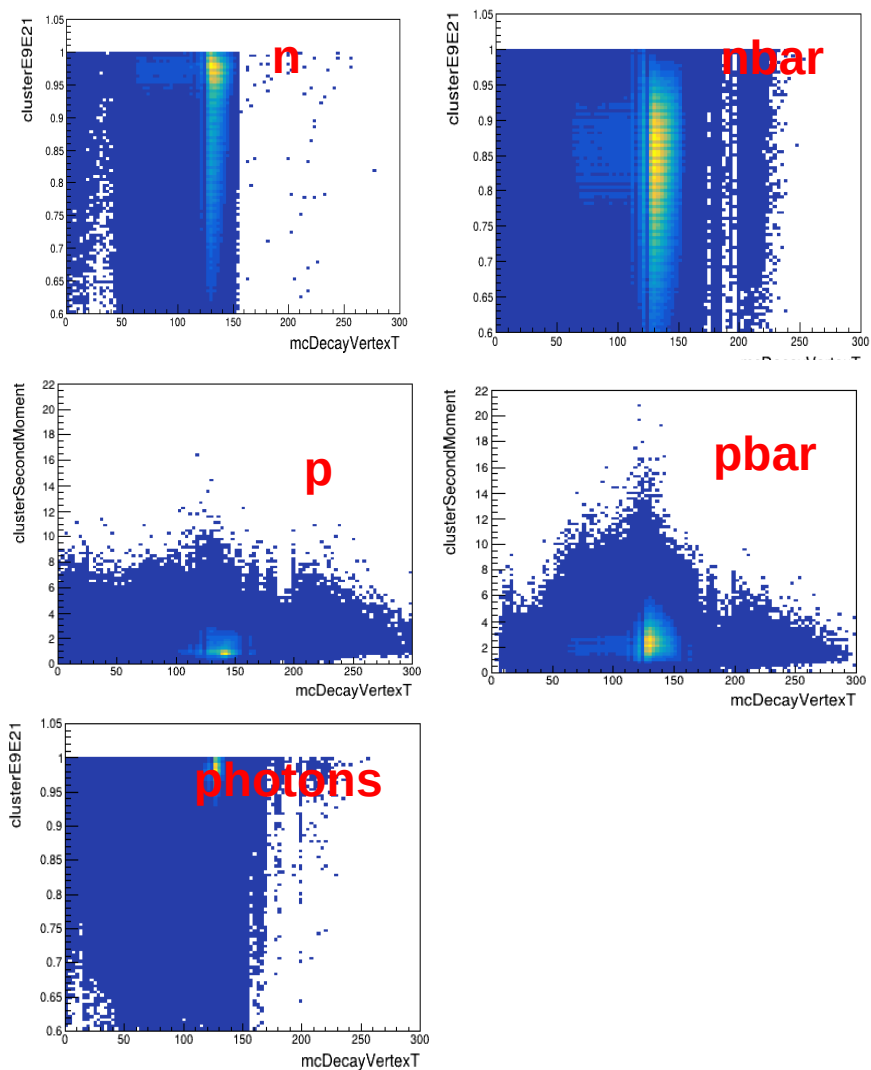


clusterAbsZernikeMoment51 v/s mcDecayVertexT

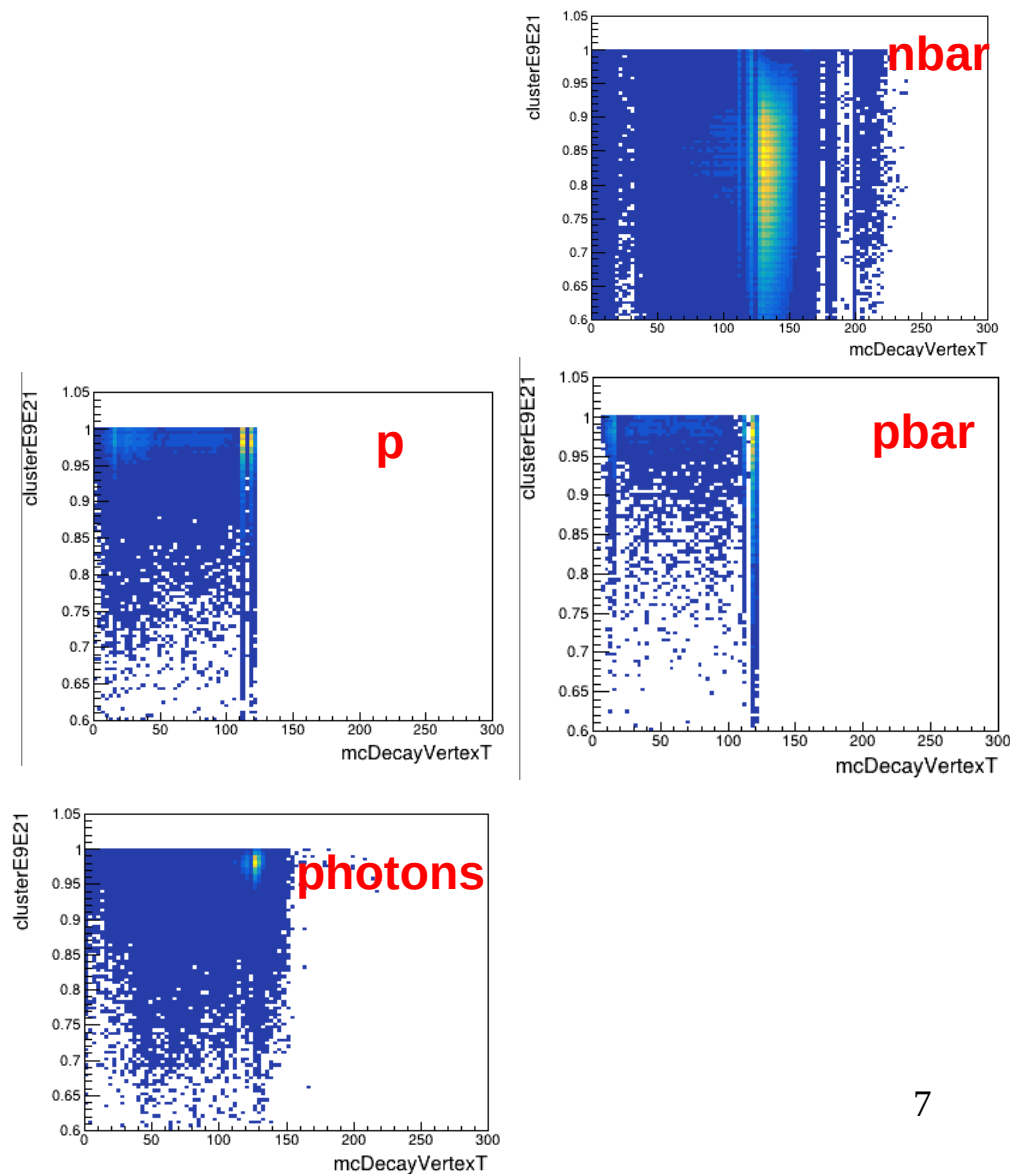
0.9 < mcE < 1 GeV



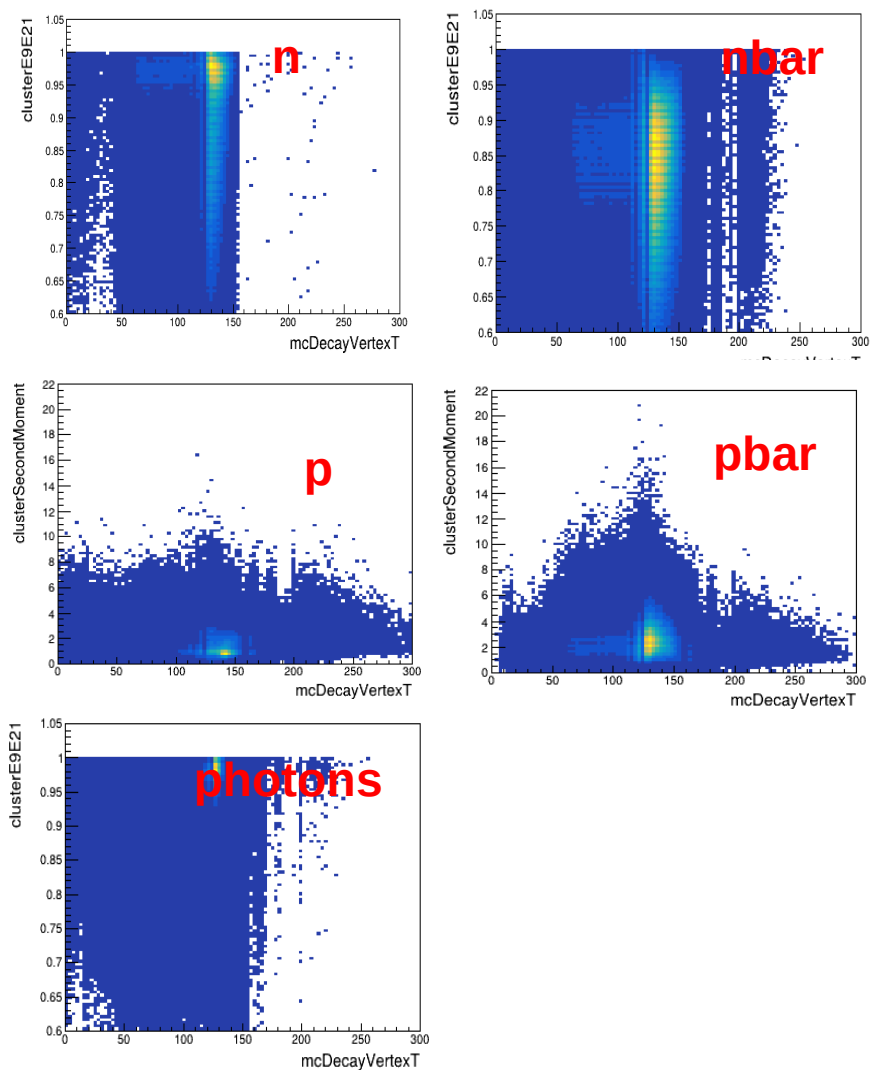
clusterE9E21 v/s mcDecayVertexT



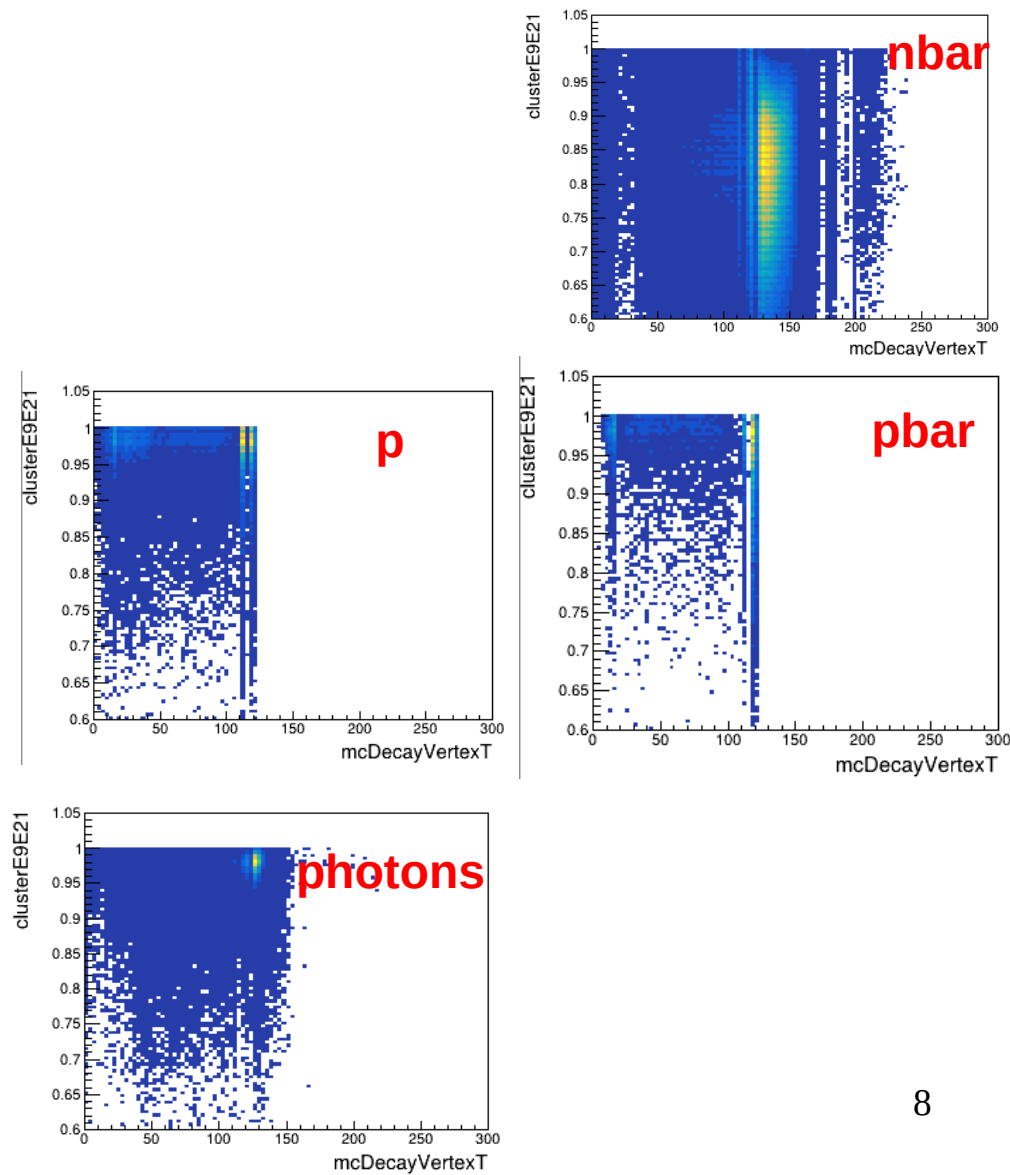
$0.9 < \text{mcE} < 1 \text{ GeV}$



clusterE9E21 v/s mcDecayVertexT

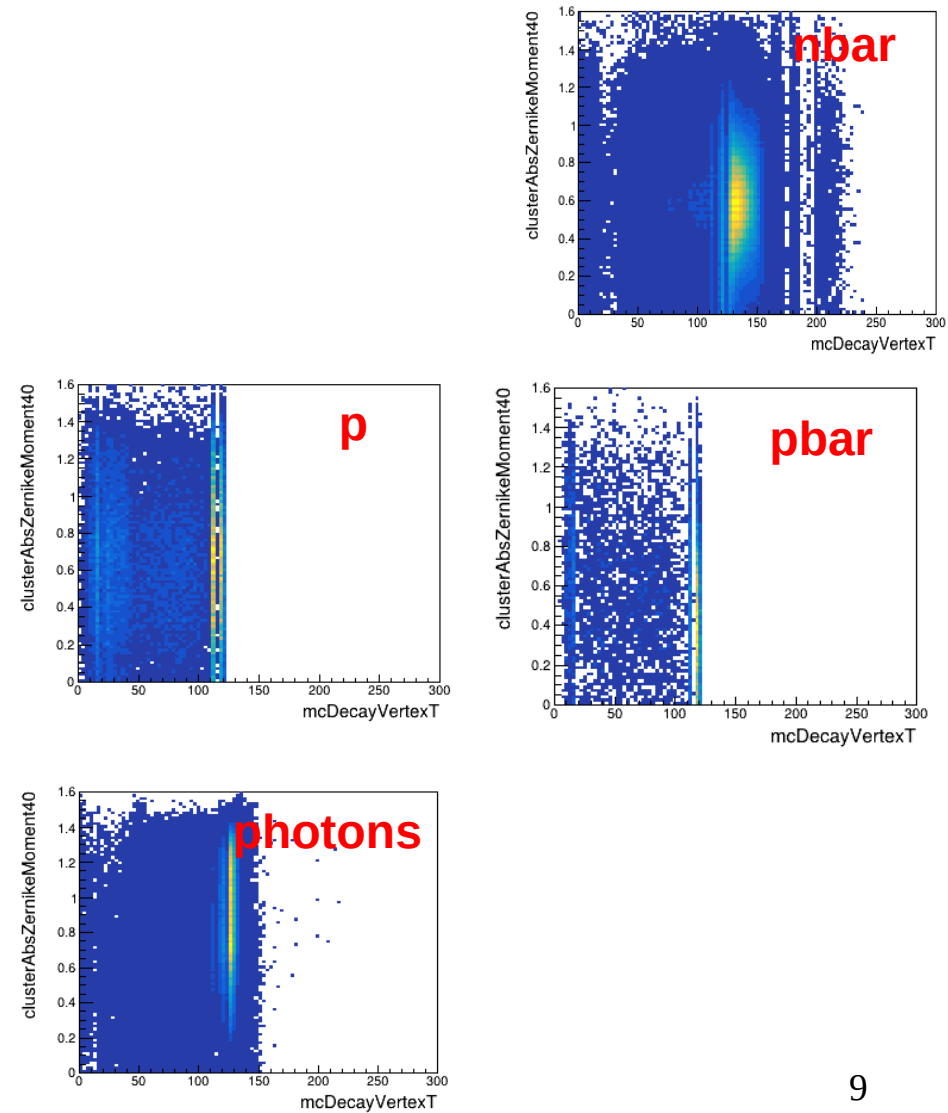
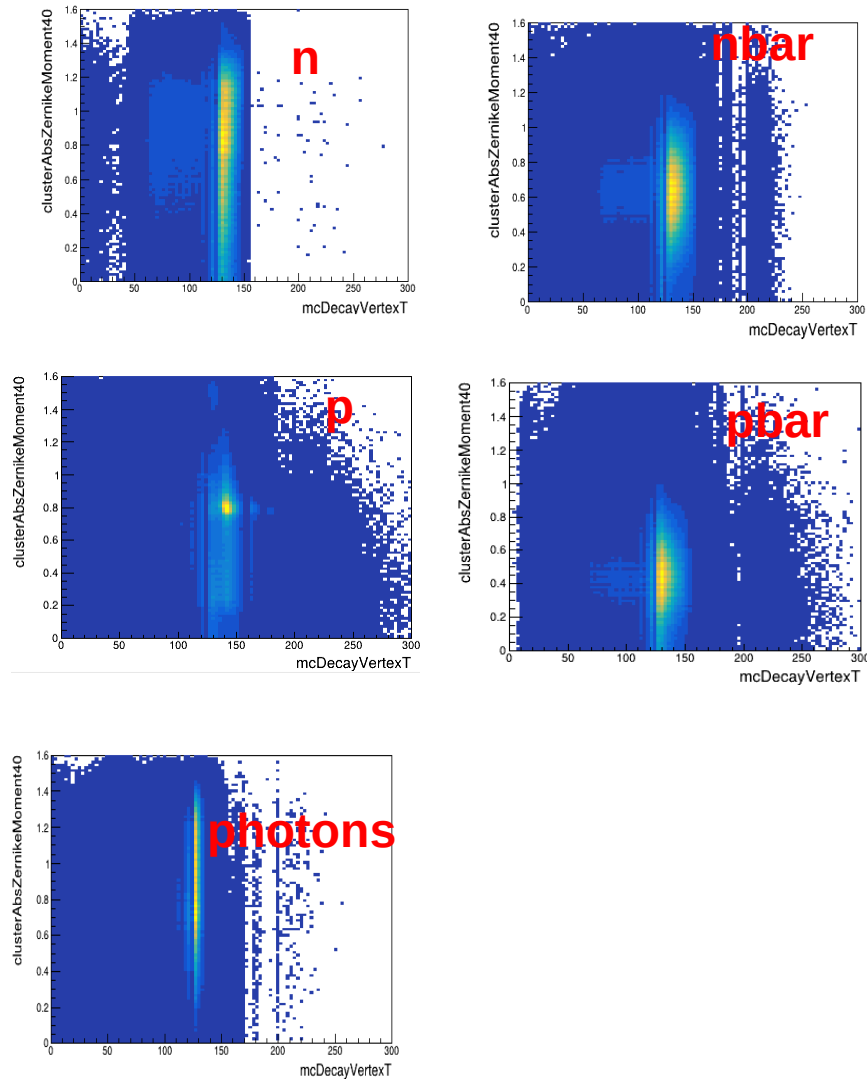


$0.9 < \text{mcE} < 1 \text{ GeV}$

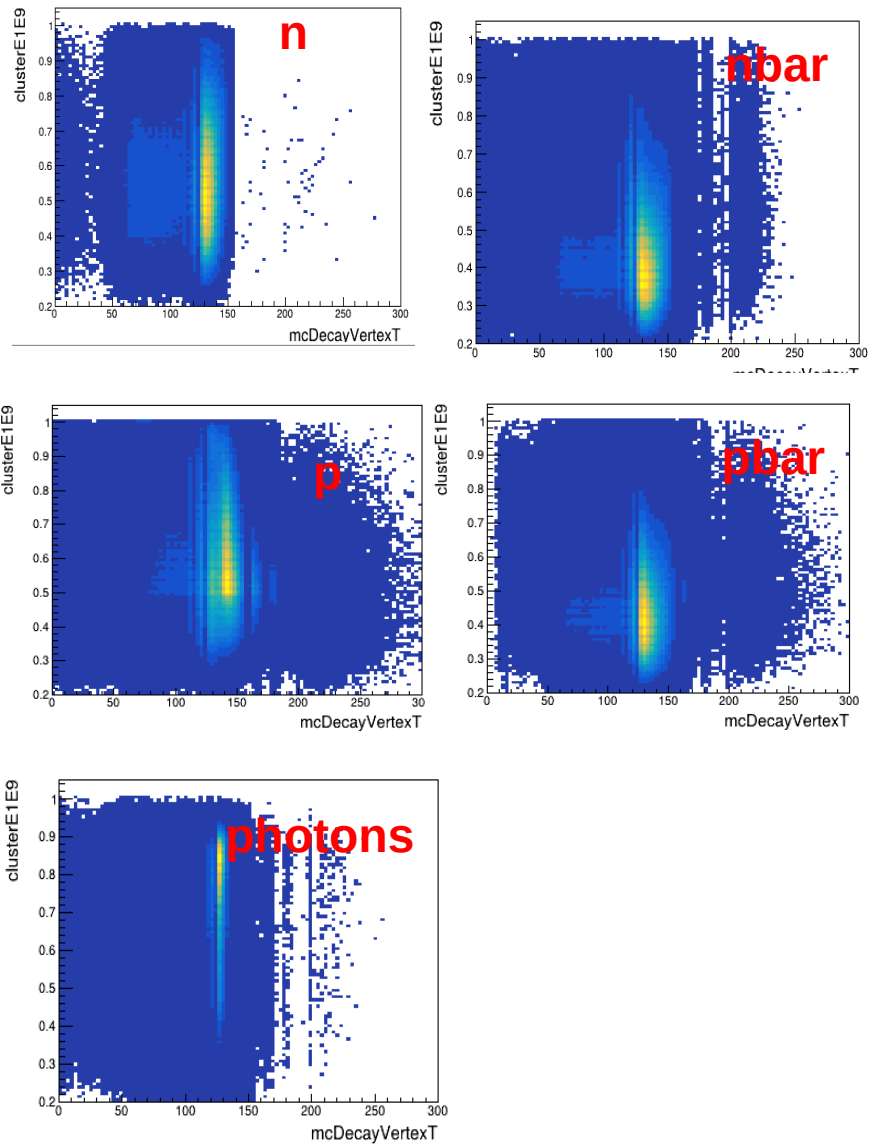


clusterAbsZernikeMoment40 v/s mcDecayVertexT

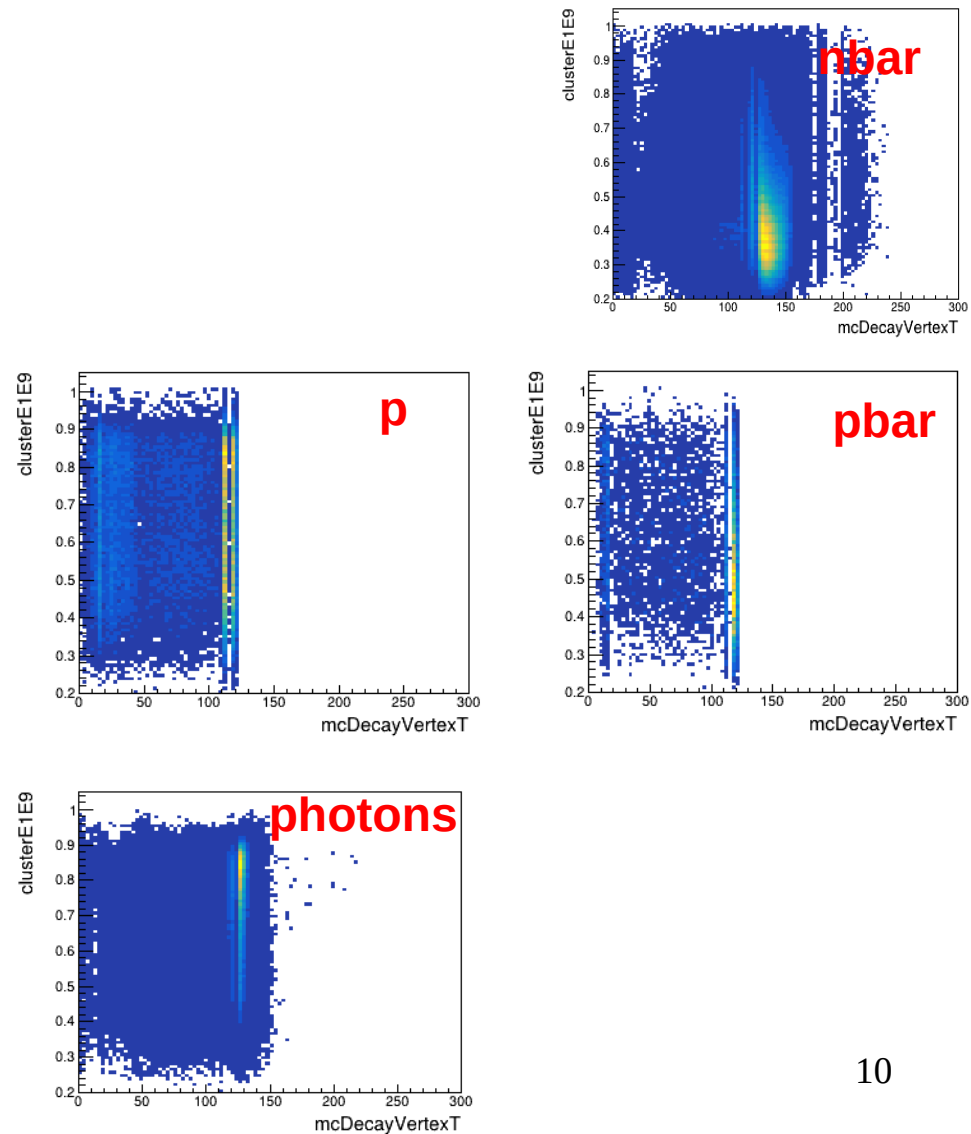
$0.9 < \text{mcE} < 1 \text{ GeV}$



clusterE1E9 v/s mcDecayVertexT

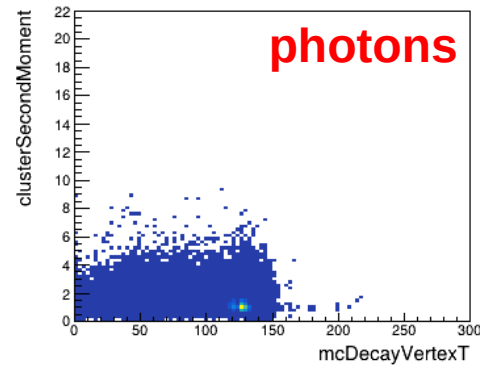
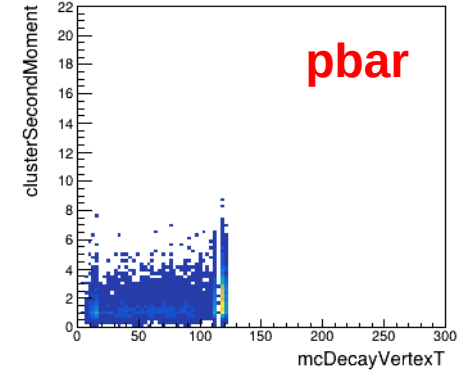
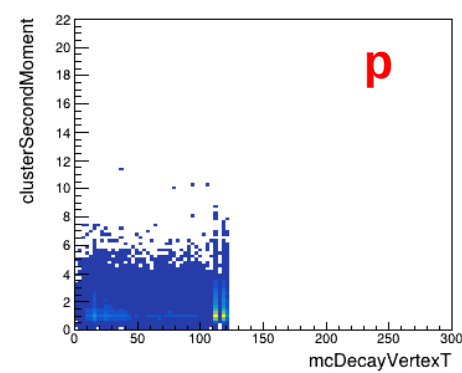
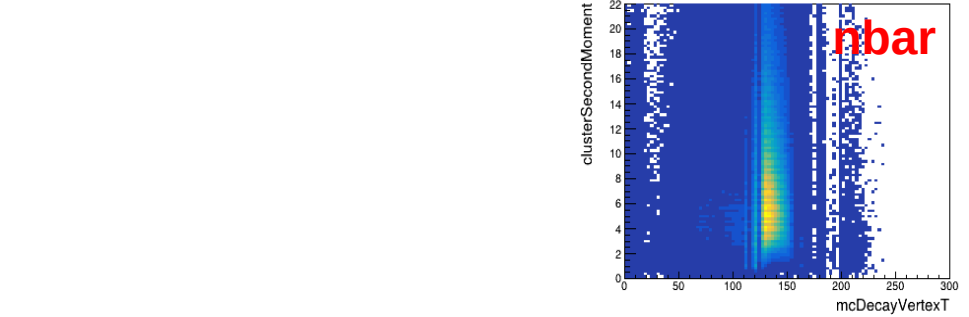
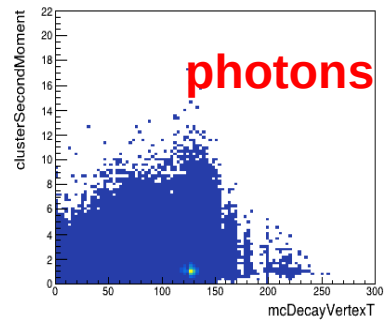
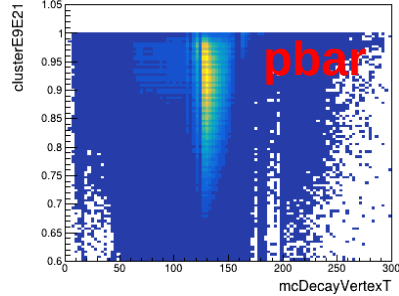
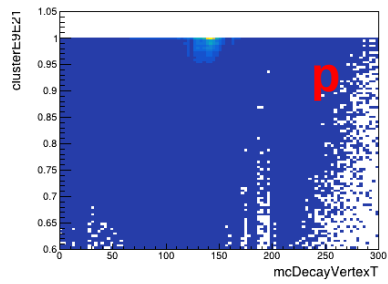
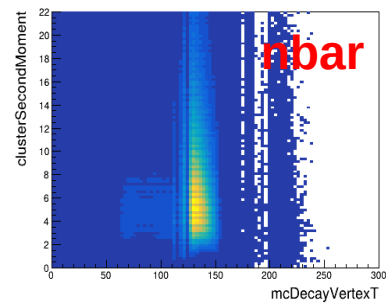
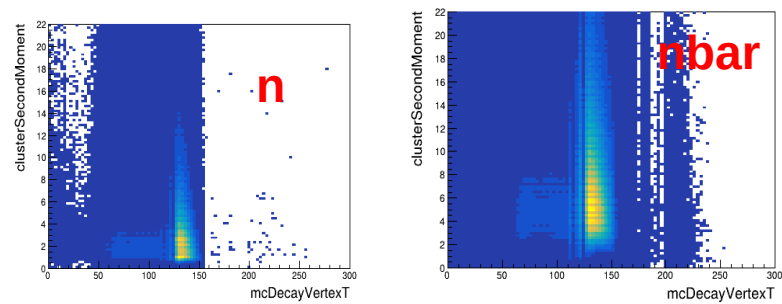


0.9 < mcE < 1 GeV

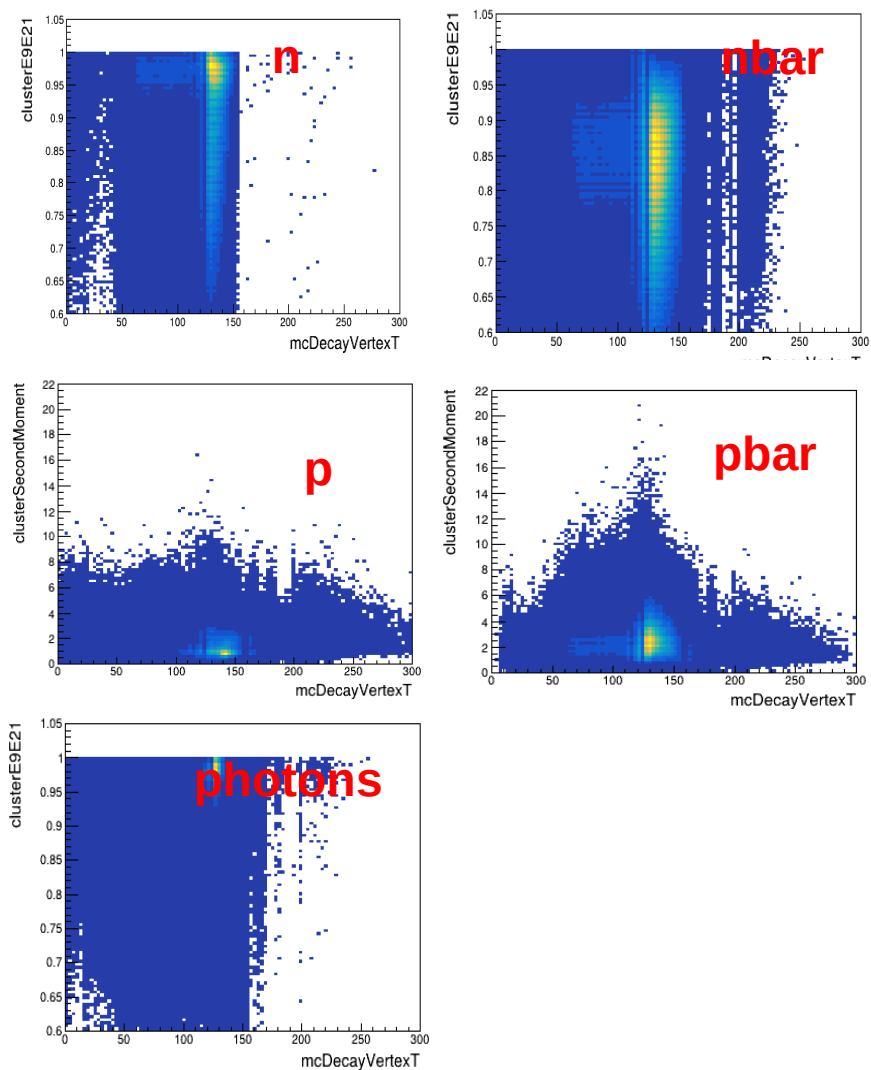


clusterSecondMoment v/s mcDecayVertexT

$0.9 < mcE < 1 \text{ GeV}$



clusterE9E21 v/s mcDecayVertexT



$0.9 < \text{mcE} < 1 \text{ GeV}$

