

# Cluster Analysis Report

**Path:** /home/virgolaema/dune/online-pointing-utils/data/prod\_es//

**File:** es\_valid\_tick5\_ch2\_min2\_tot1\_clusters.root

## **Clustering Parameters:**

**Time tolerance:** 5 ticks

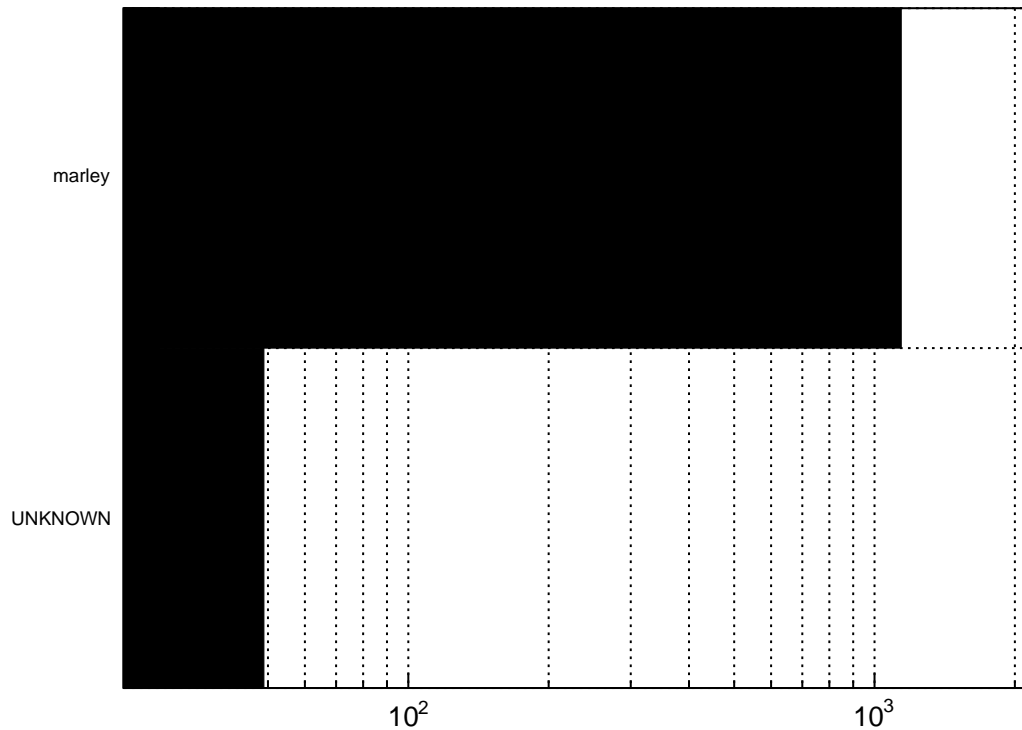
**Channel tolerance:** 2

**Min cluster size:** 2 TPs

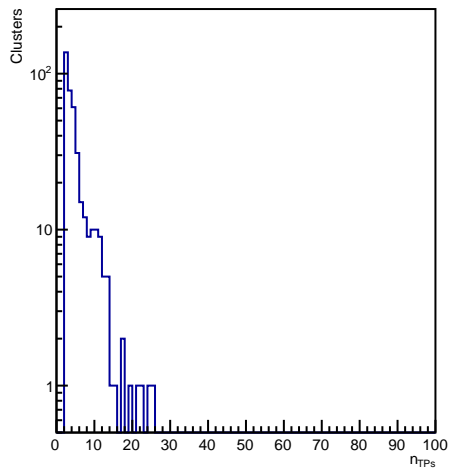
**Min total charge threshold:** 1

**Generated on:** Mon Oct 13 10:10:45 2025

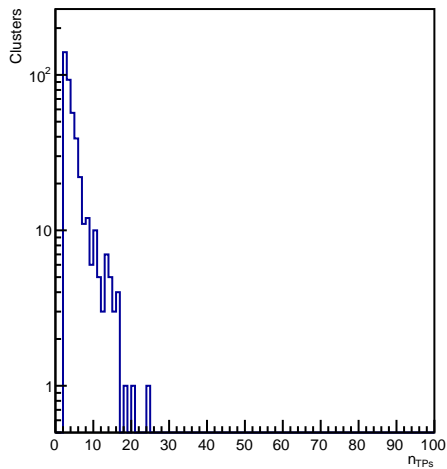
# Clusters by true label



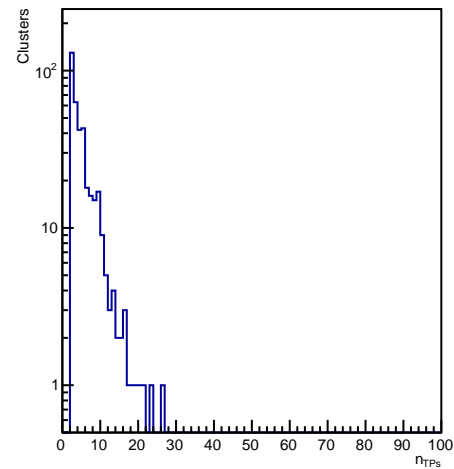
Cluster size (n\_tps) - U



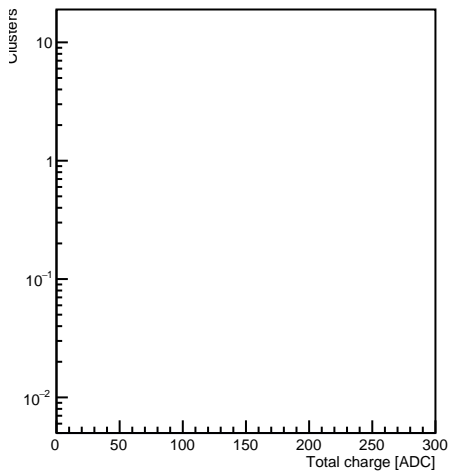
Cluster size (n\_tps) - V



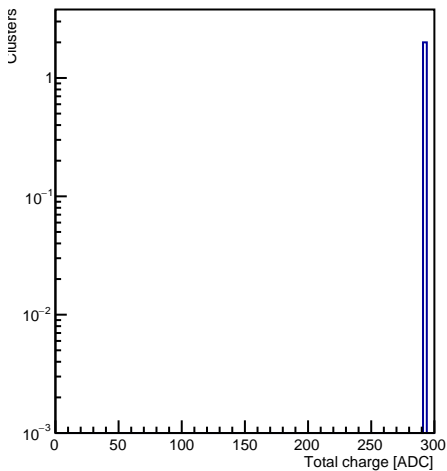
Cluster size (n\_tps) - X



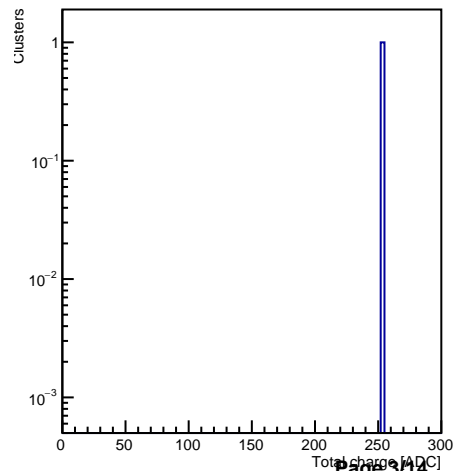
Total charge - U



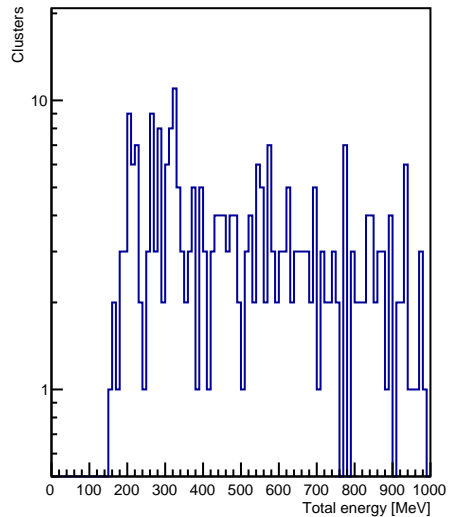
Total charge - V



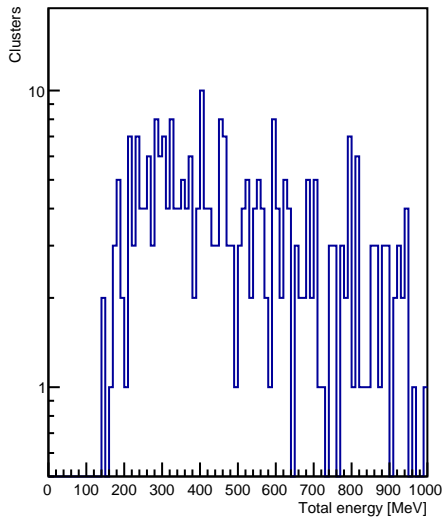
Total charge - X



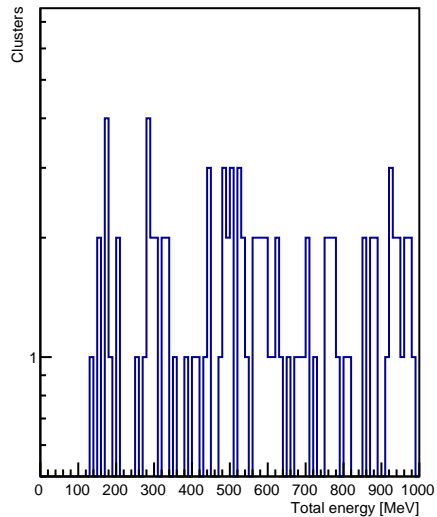
Total energy - U



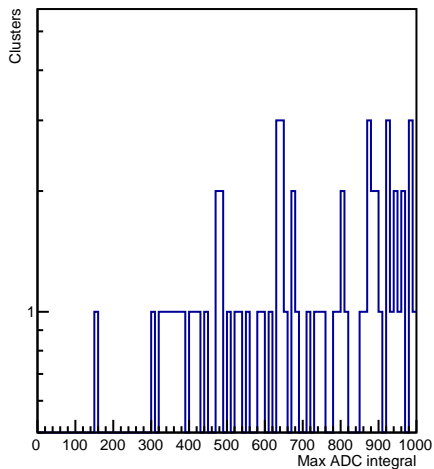
Total energy - V



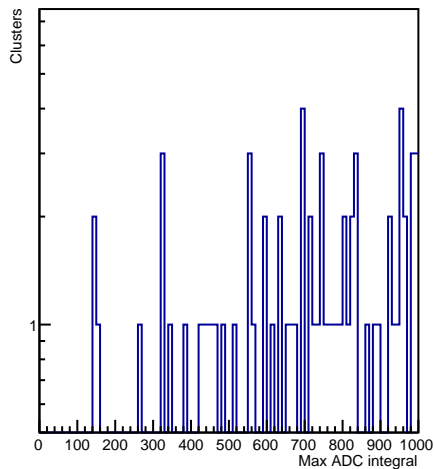
Total energy - X



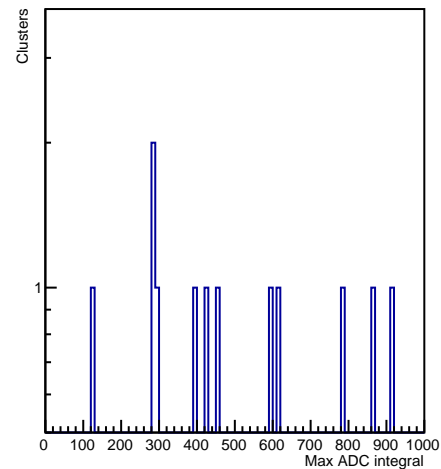
Max TP adc\_integral - U



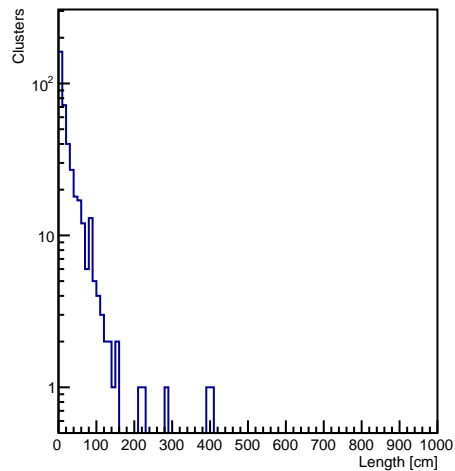
Max TP adc\_integral - V



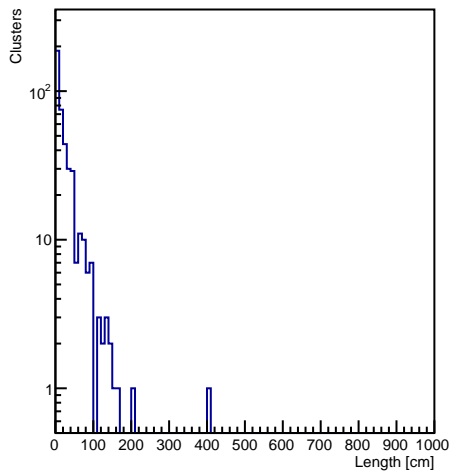
Max TP adc\_integral - X



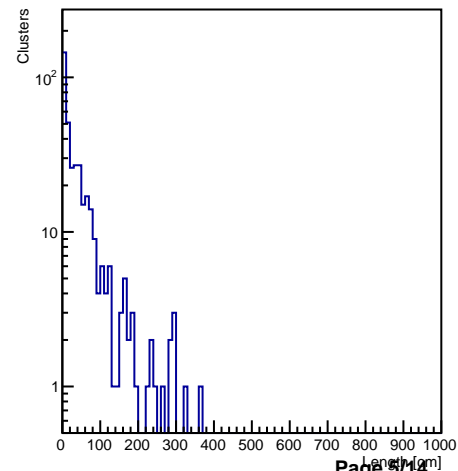
Total length (cm) - U

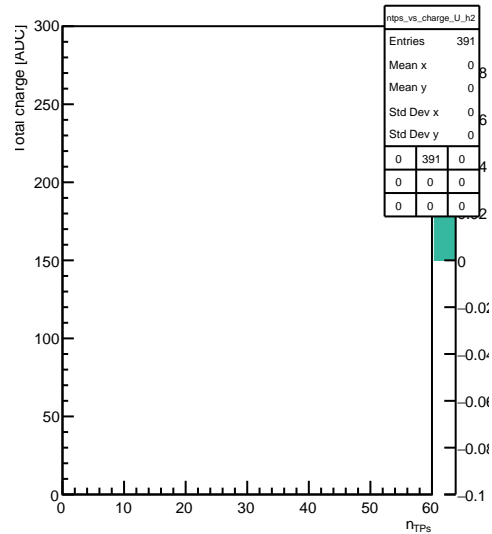
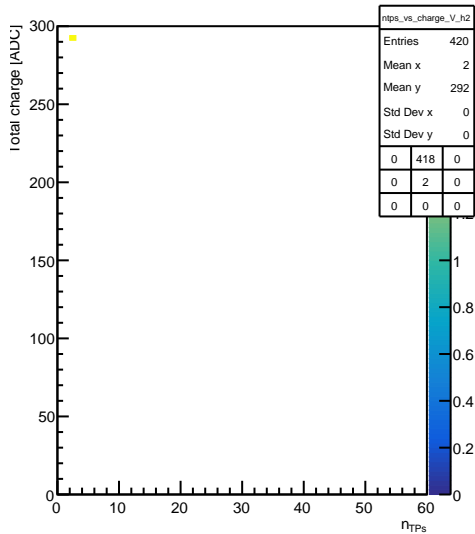
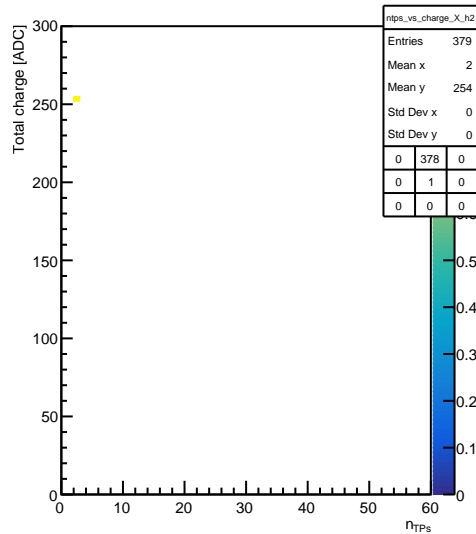


Total length (cm) - V

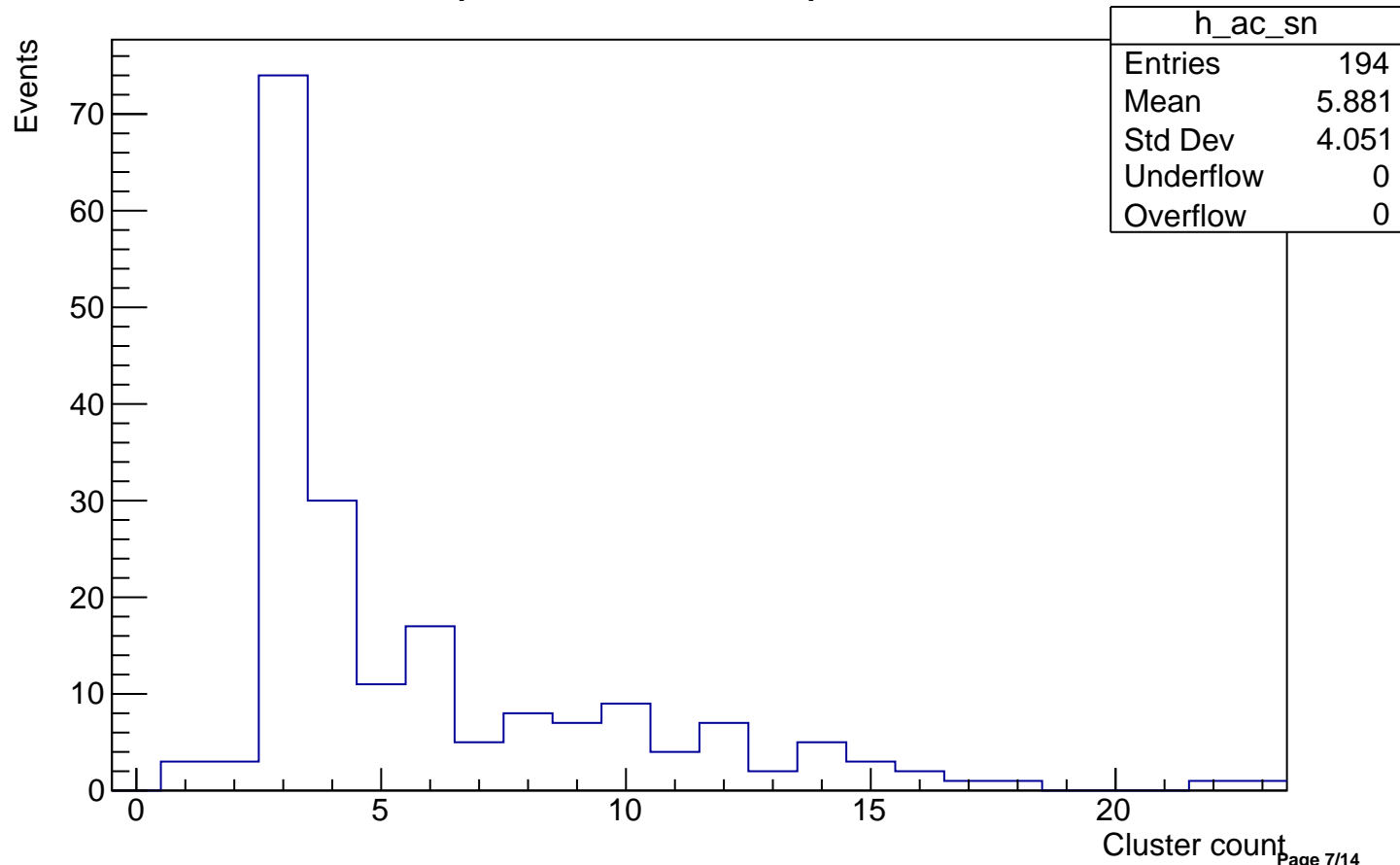


Total length (cm) - X

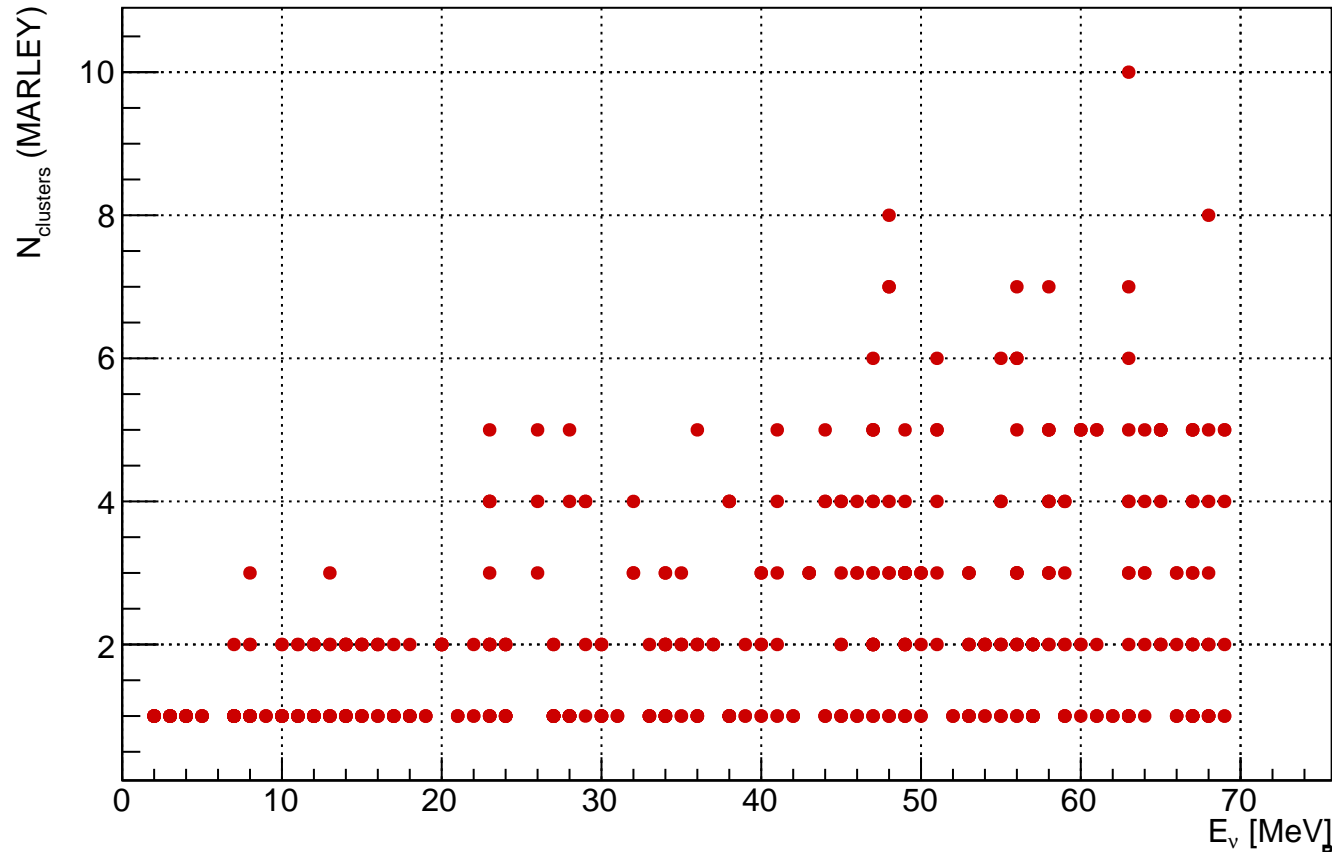


$n_{TPs}$  vs total charge - U

 $n_{TPs}$  vs total charge - V

 $n_{TPs}$  vs total charge - X


# Supernova clusters per event

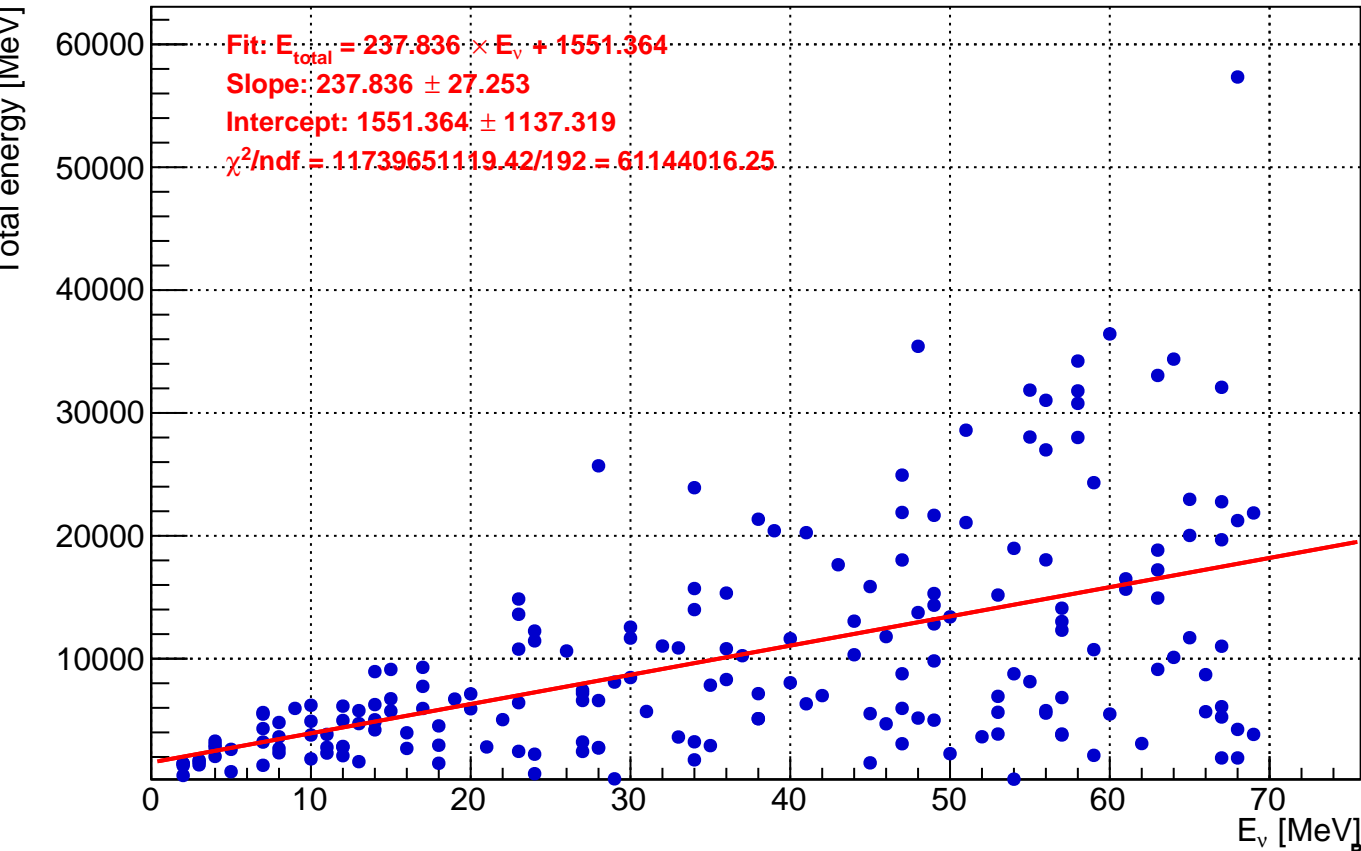


# MARLEY clusters vs $E_\nu$

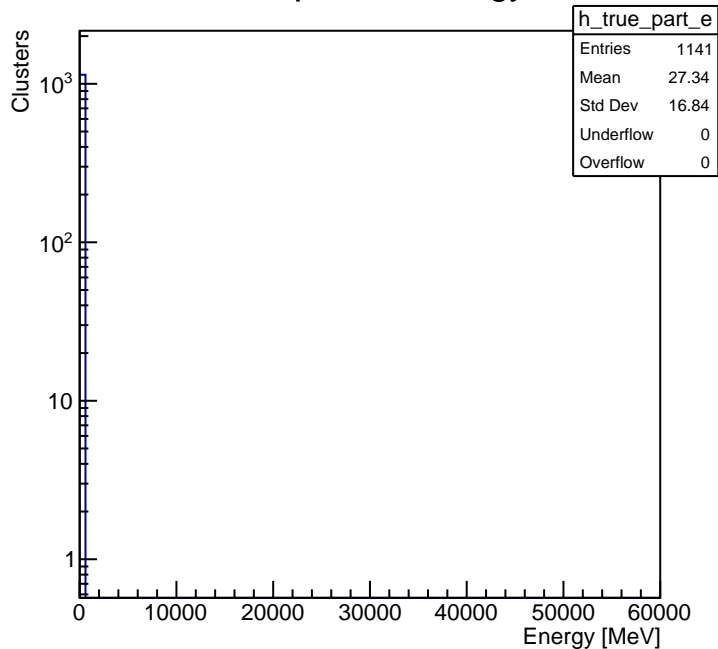




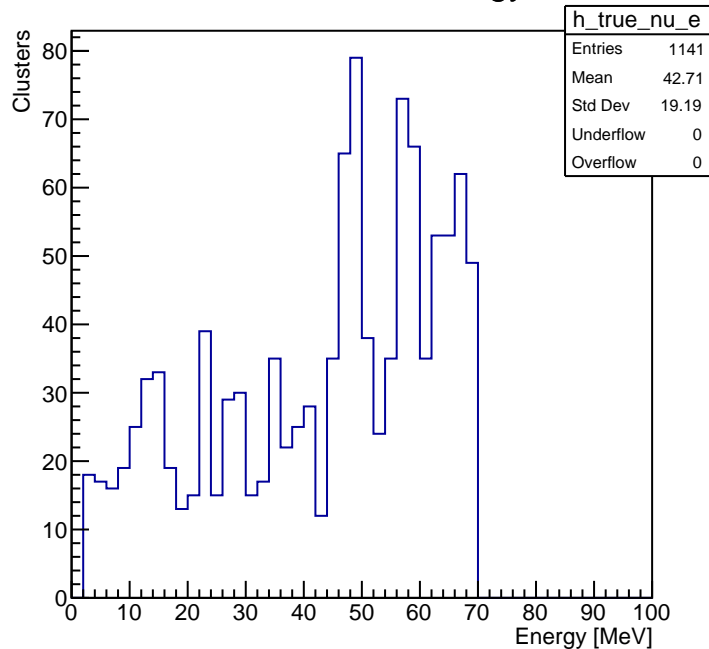
# Total energy of MARLEY clusters vs $E_v$



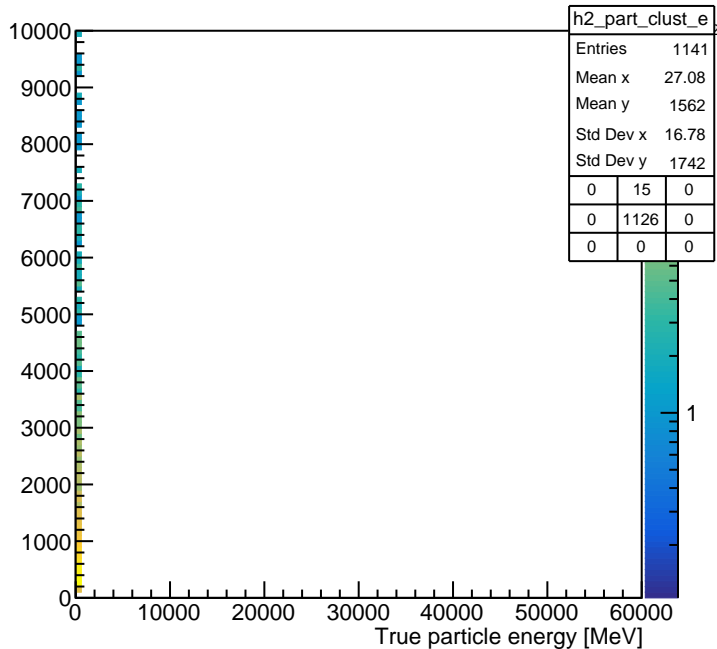
True particle energy



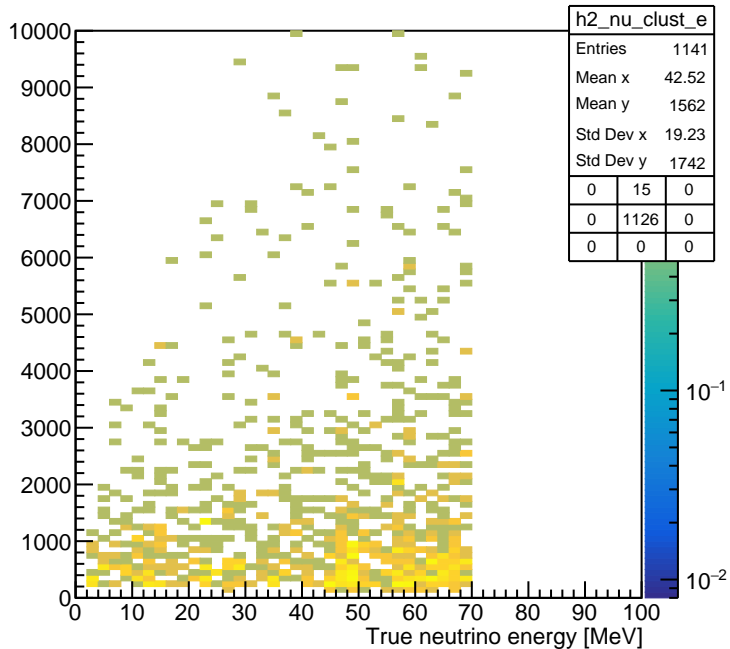
True neutrino energy



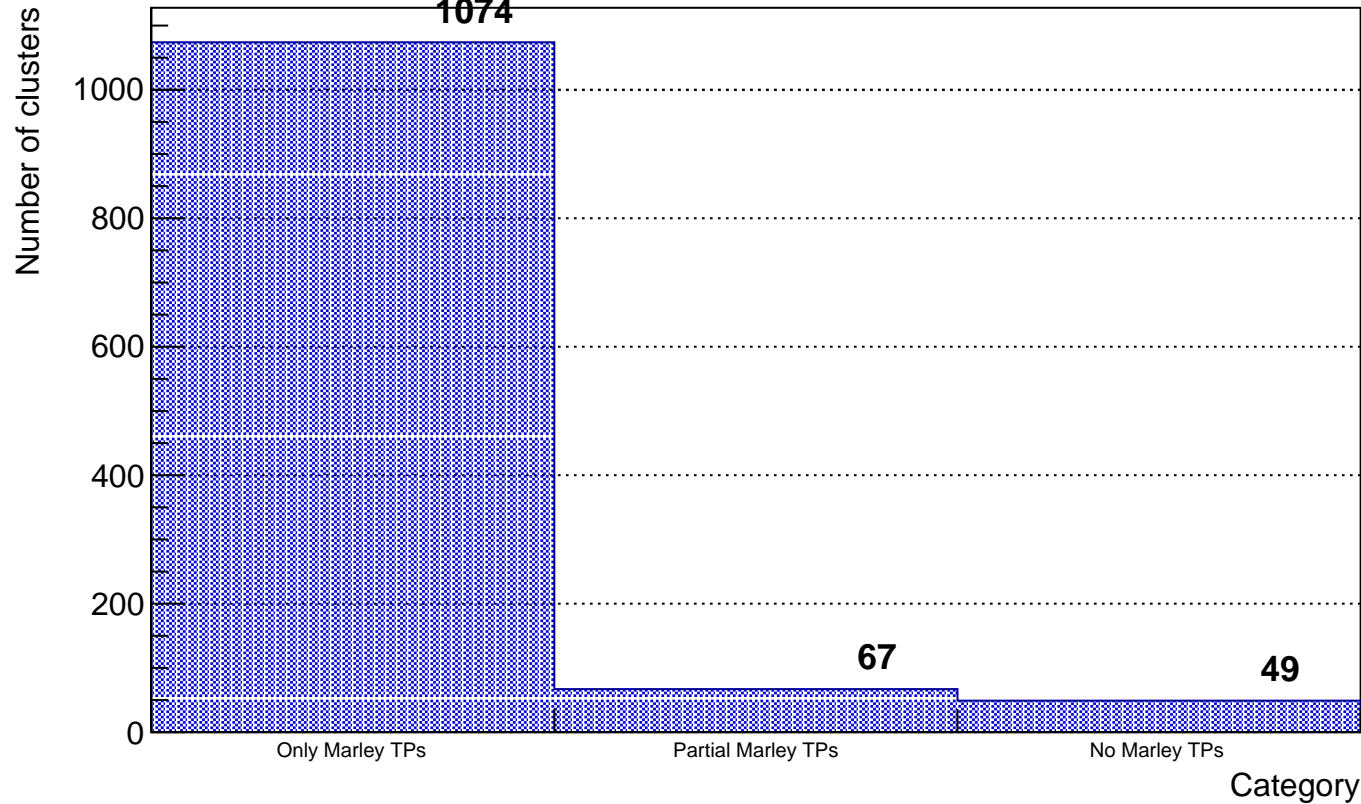
# Particle energy vs cluster energy



# Neutrino energy vs cluster energy



# Clusters by Marley TP content



# Total ADC Integral by Cluster Family

