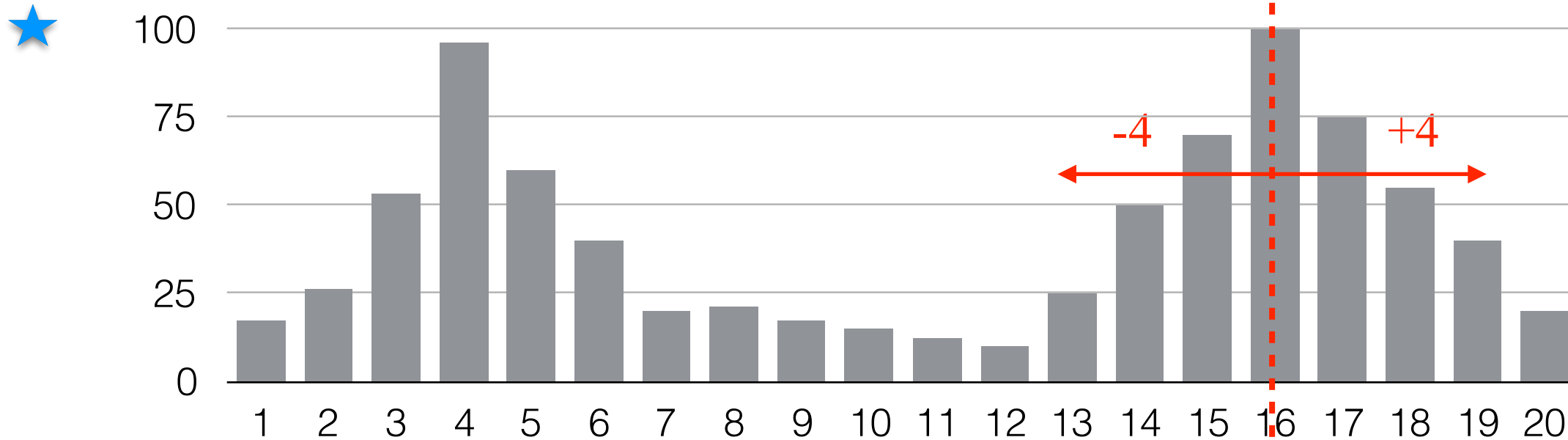# GEM performance: Cluster-finding
Update (06/12/2020)   by Ishara Fernando

Comparison between Average Charge and Geometric Charge

⭐ **Also let's order the clusters according to the "charge" instead of "weight"**

$$\text{Average Charge} = \frac{1}{2} \sum_{i=x_{chan}-4, j=y_{chan}-4}^{i=x_{chan}+4, j=y_{chan}+4} (\text{ADC}_{x_{chan}} + \text{ADC}_{y_{chan}})$$

$$\text{Geometric Charge} = \sum_{i=x_{chan}-4, j=y_{chan}-4}^{i=x_{chan}+4, j=y_{chan}+4} \sqrt{(\text{ADC}_{x_{chan}} * \text{ADC}_{y_{chan}})}$$
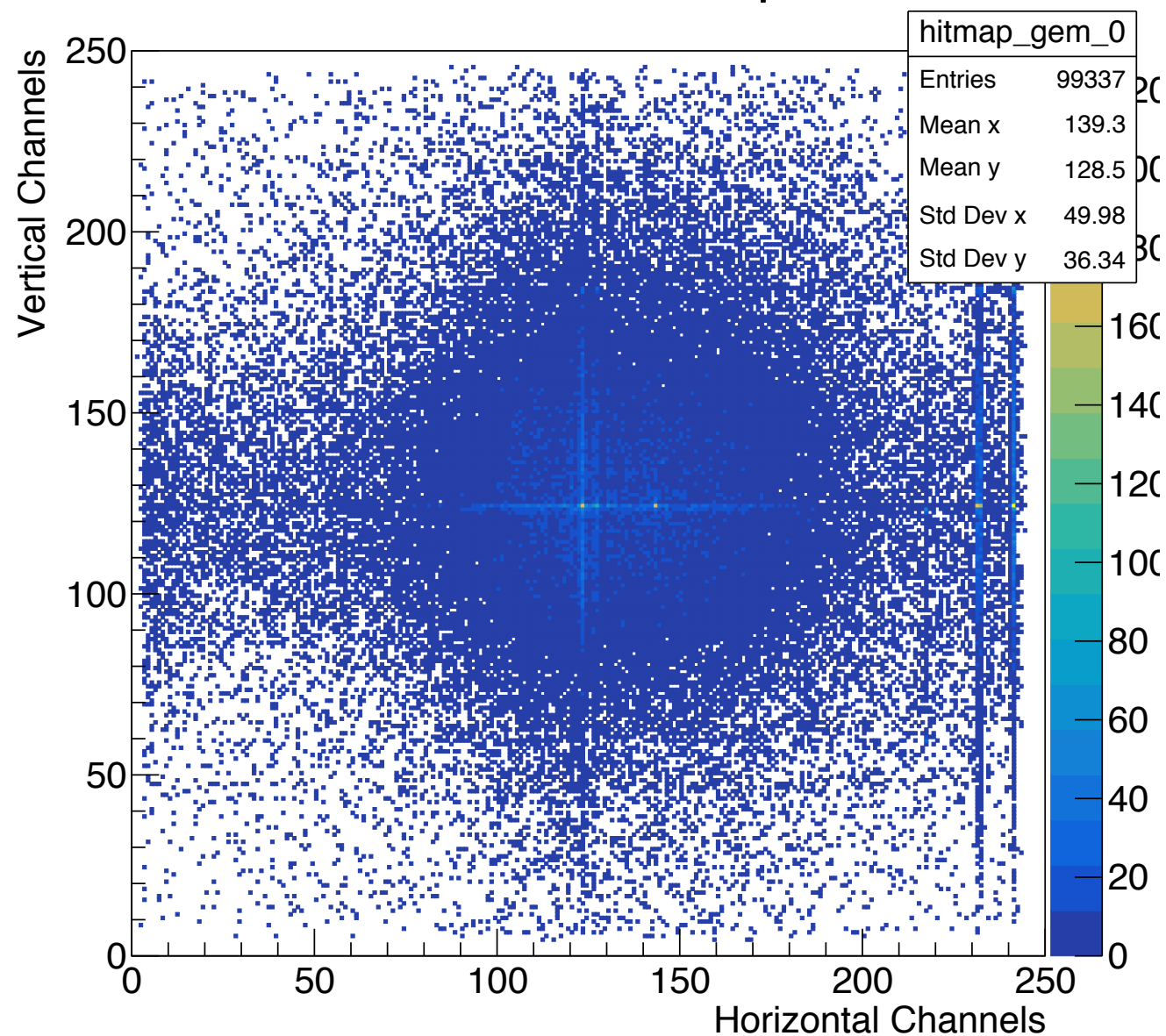
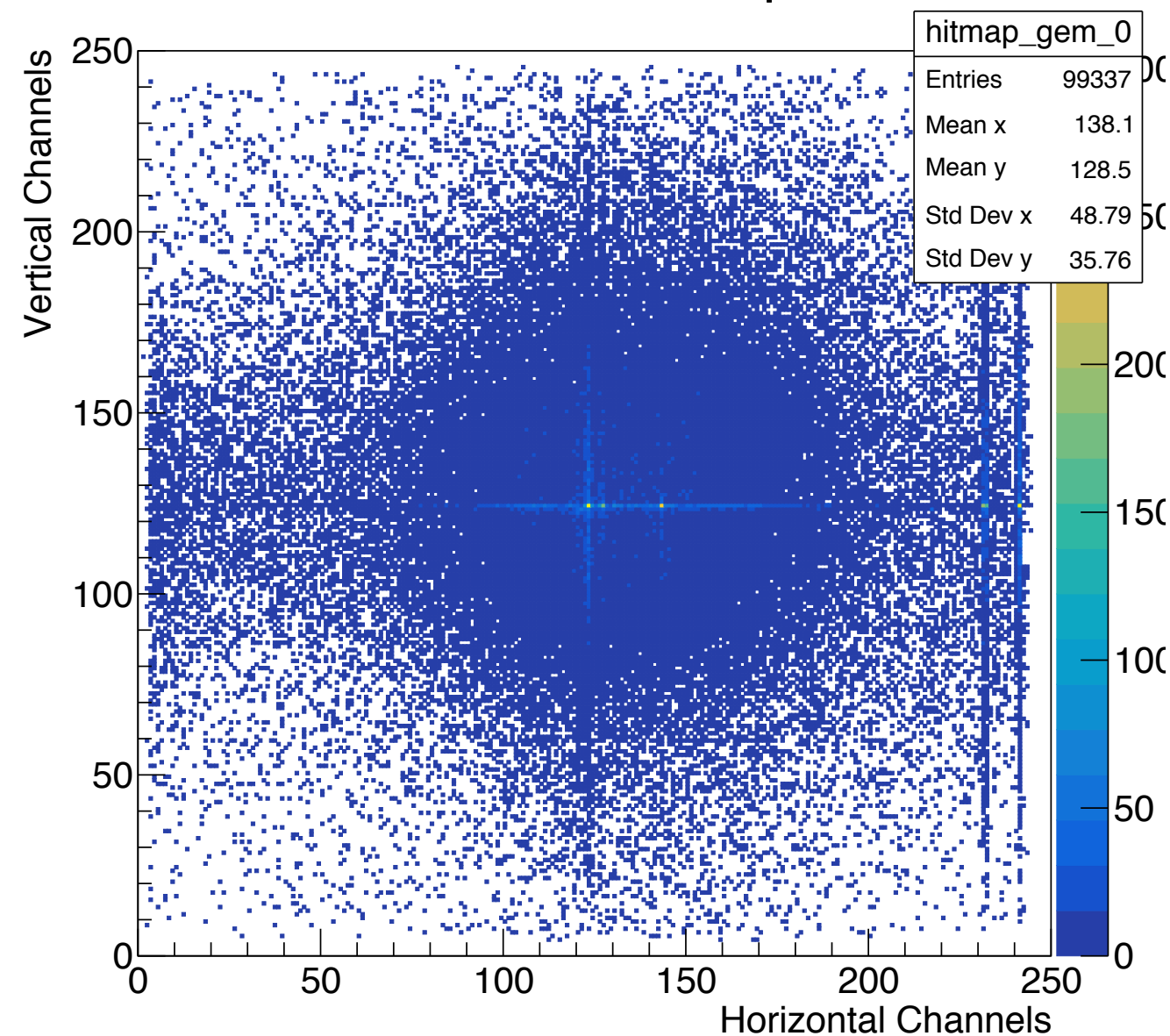# GEM performance: Cluster-finding Update (06/12/2020)

by Ishara Fernando

Clusters ordered by Charge

Clusters ordered by Weight

MIN_PEAK_ADC=200 & Run 6290

GEM performance: Cluster-finding Update (06/12/2020)
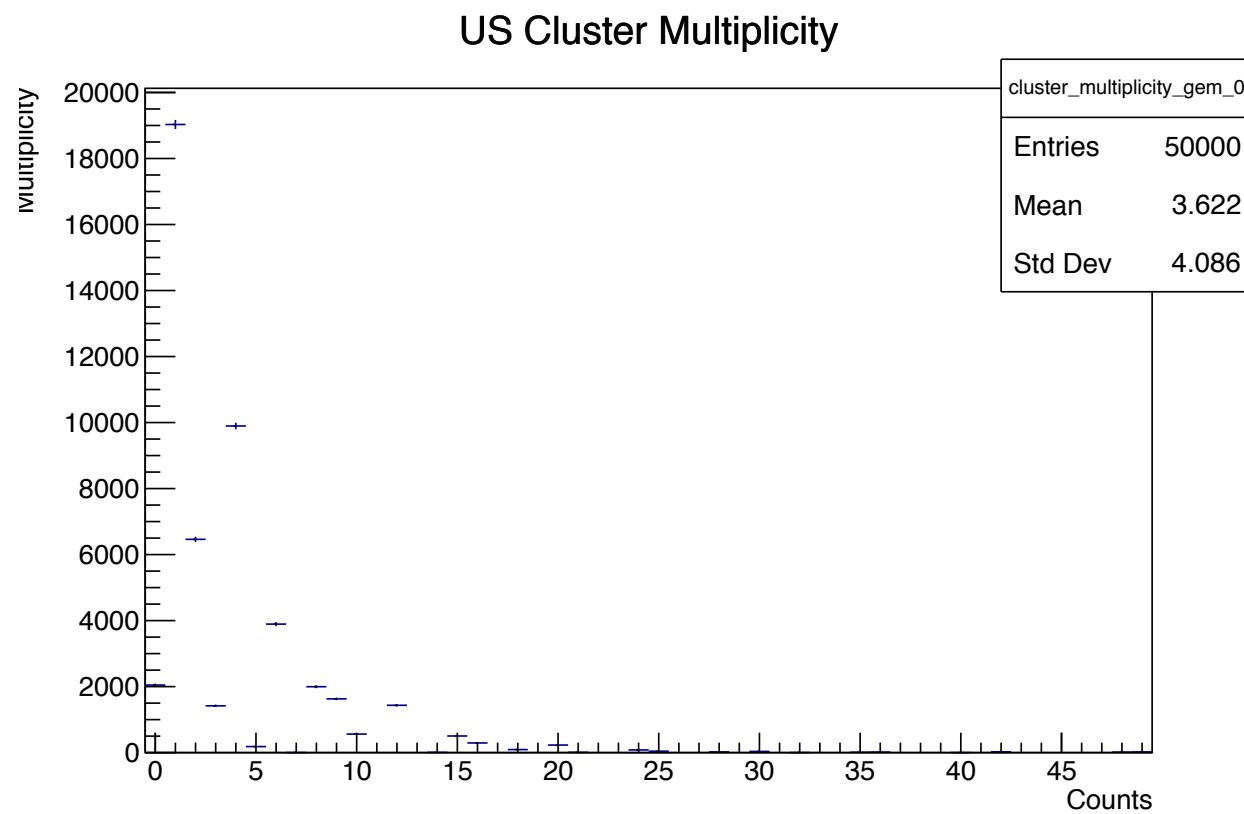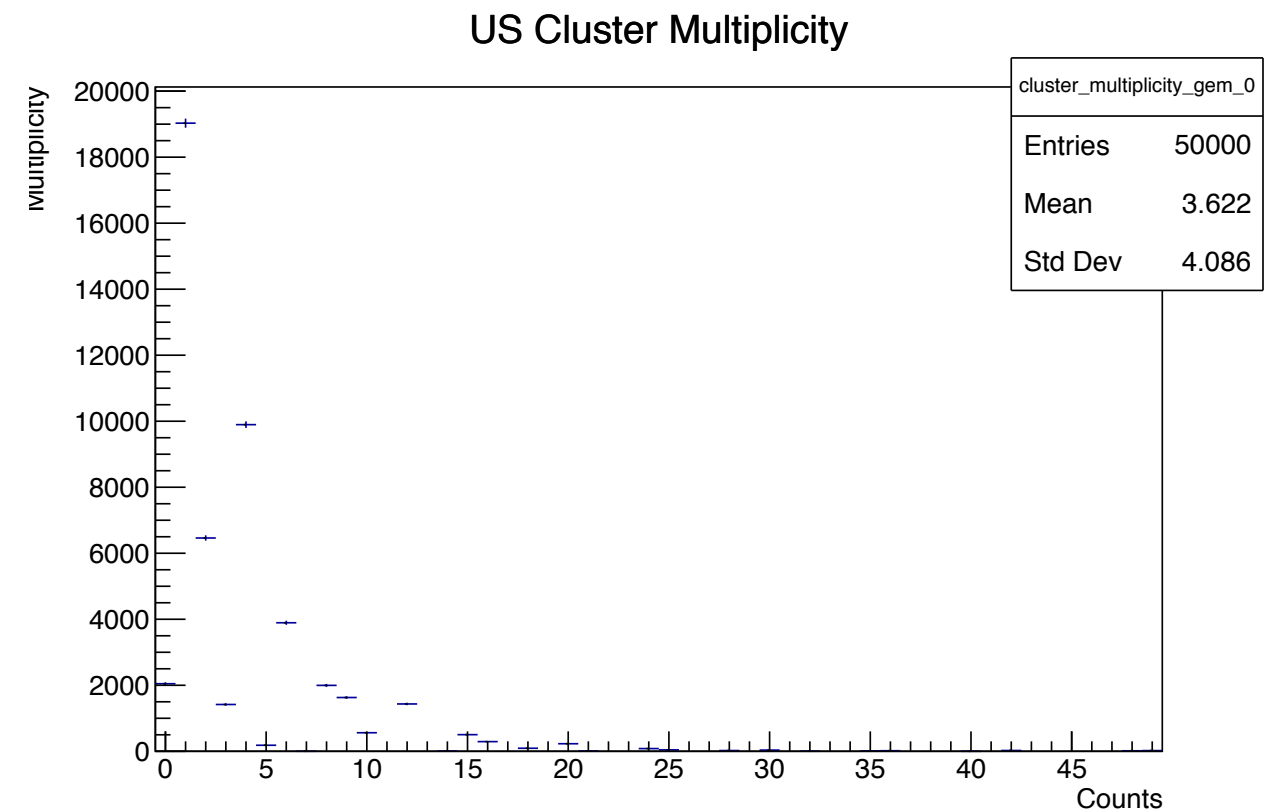*by Ishara Fernando*

Clusters ordered by Charge

Clusters ordered by Weight

MIN_PEAK_ADC=200 & Run 6290

GEM performance: Cluster-finding Update (06/12/2020) *by Ishara Fernando*

Clusters ordered by Charge

US Cluster Multiplicity

cluster_multiplicity_gem_0	
Entries	50000
Mean	3.622
Std Dev	4.086

Clusters ordered by Weight

US Cluster Multiplicity

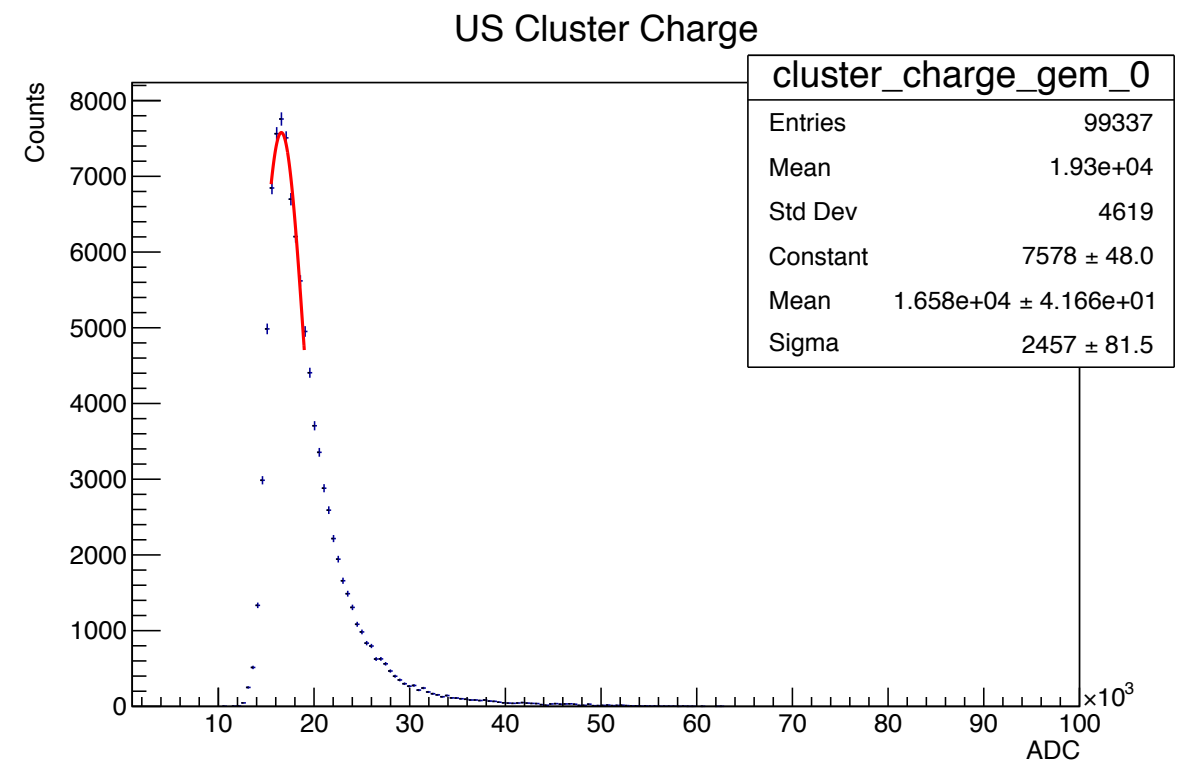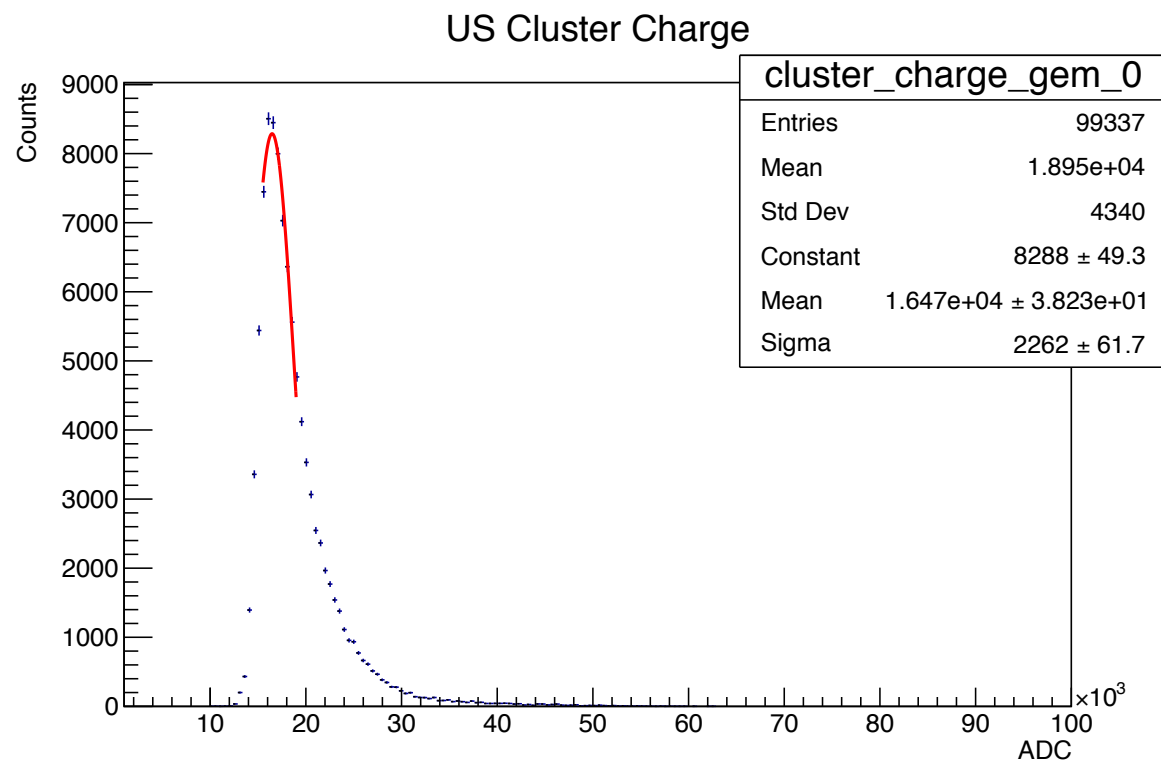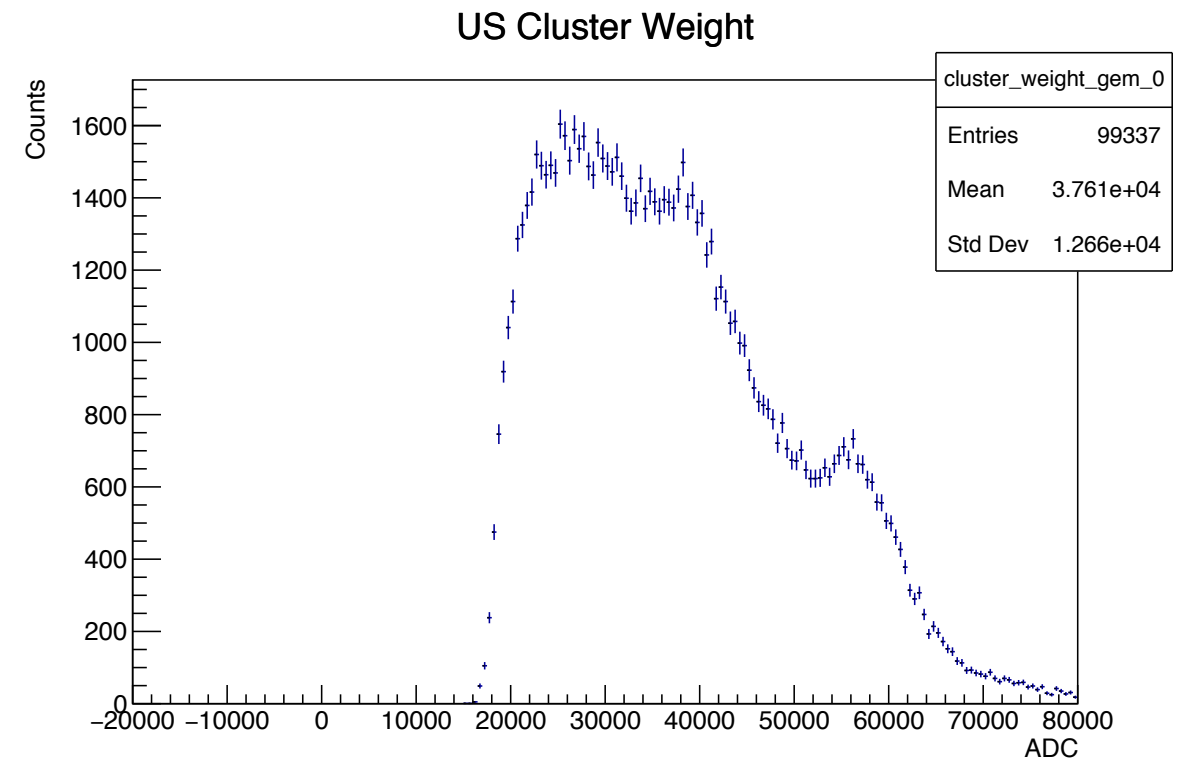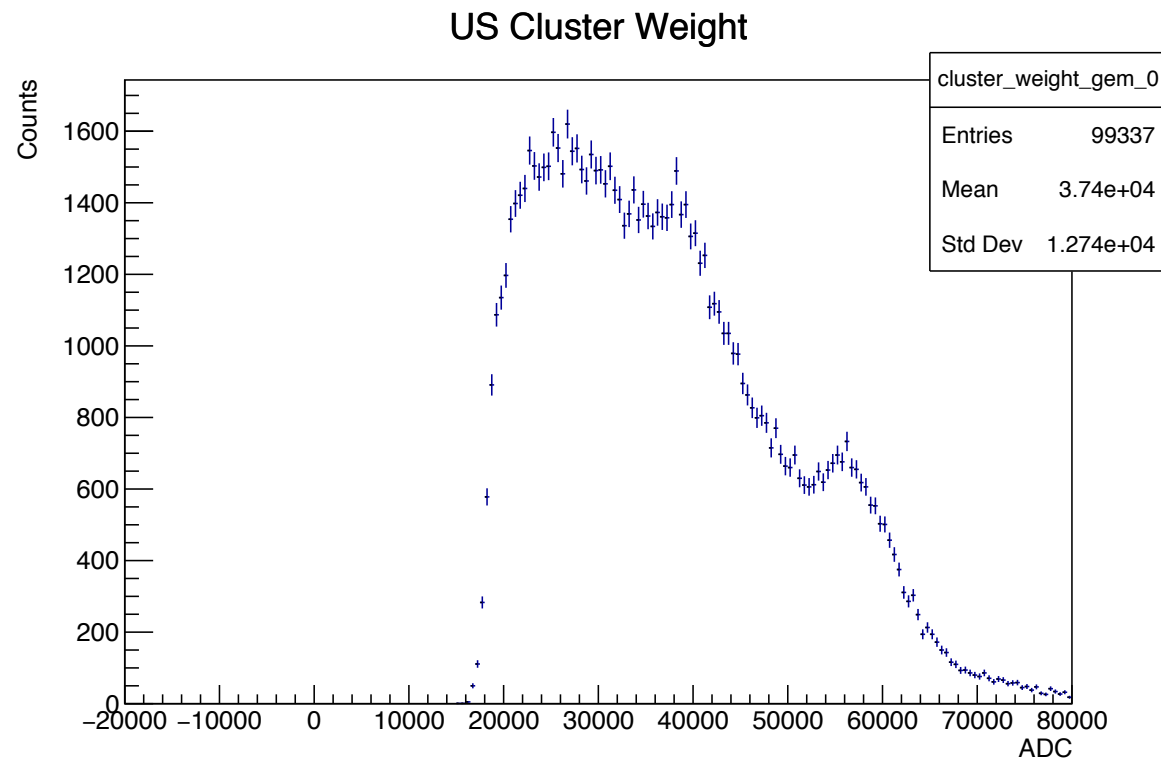| cluster_multiplicity_gem_0	
Entries	50000
Mean	3.622
Std Dev	4.086

MIN_PEAK_ADC=200 & Run 6290
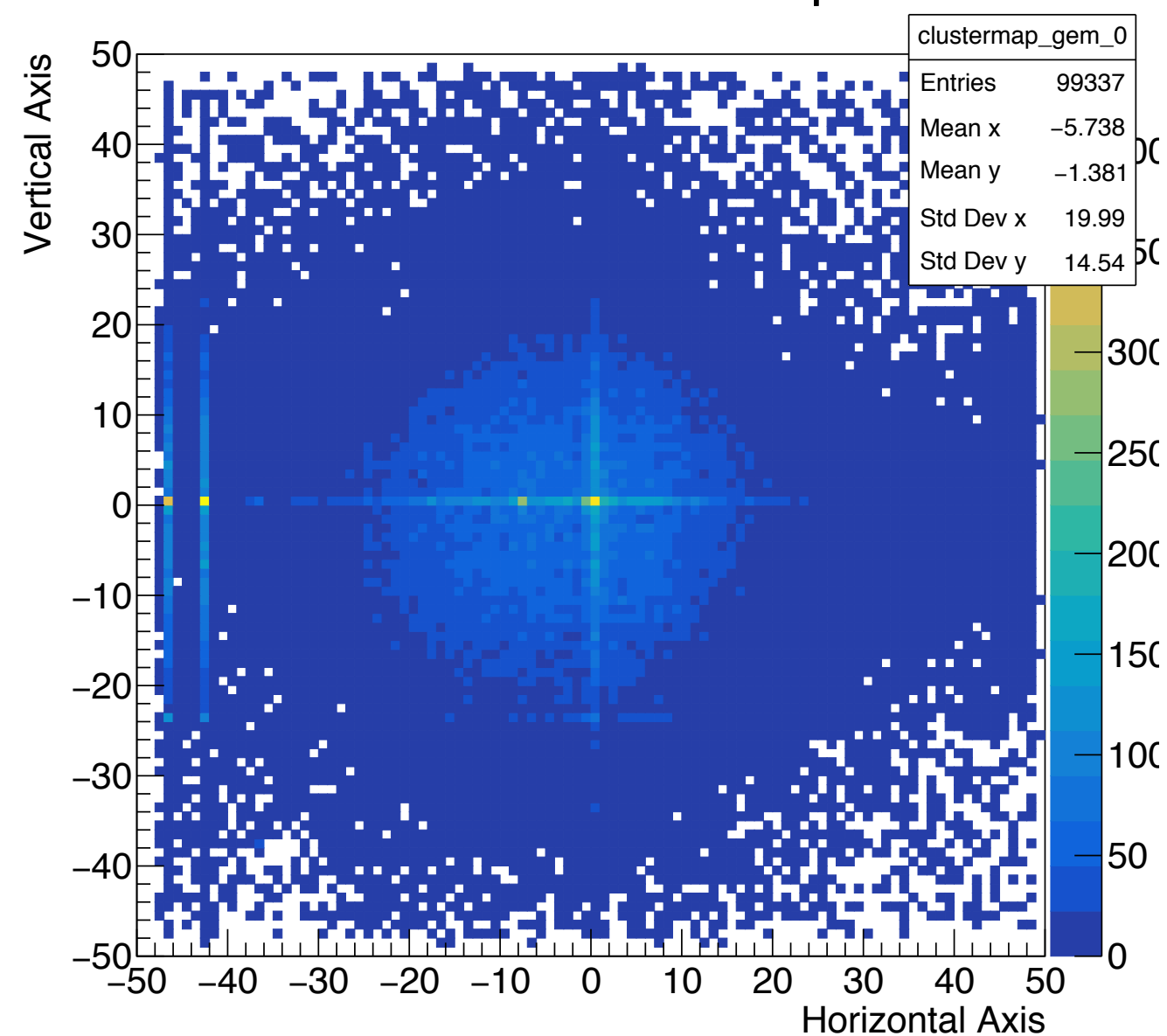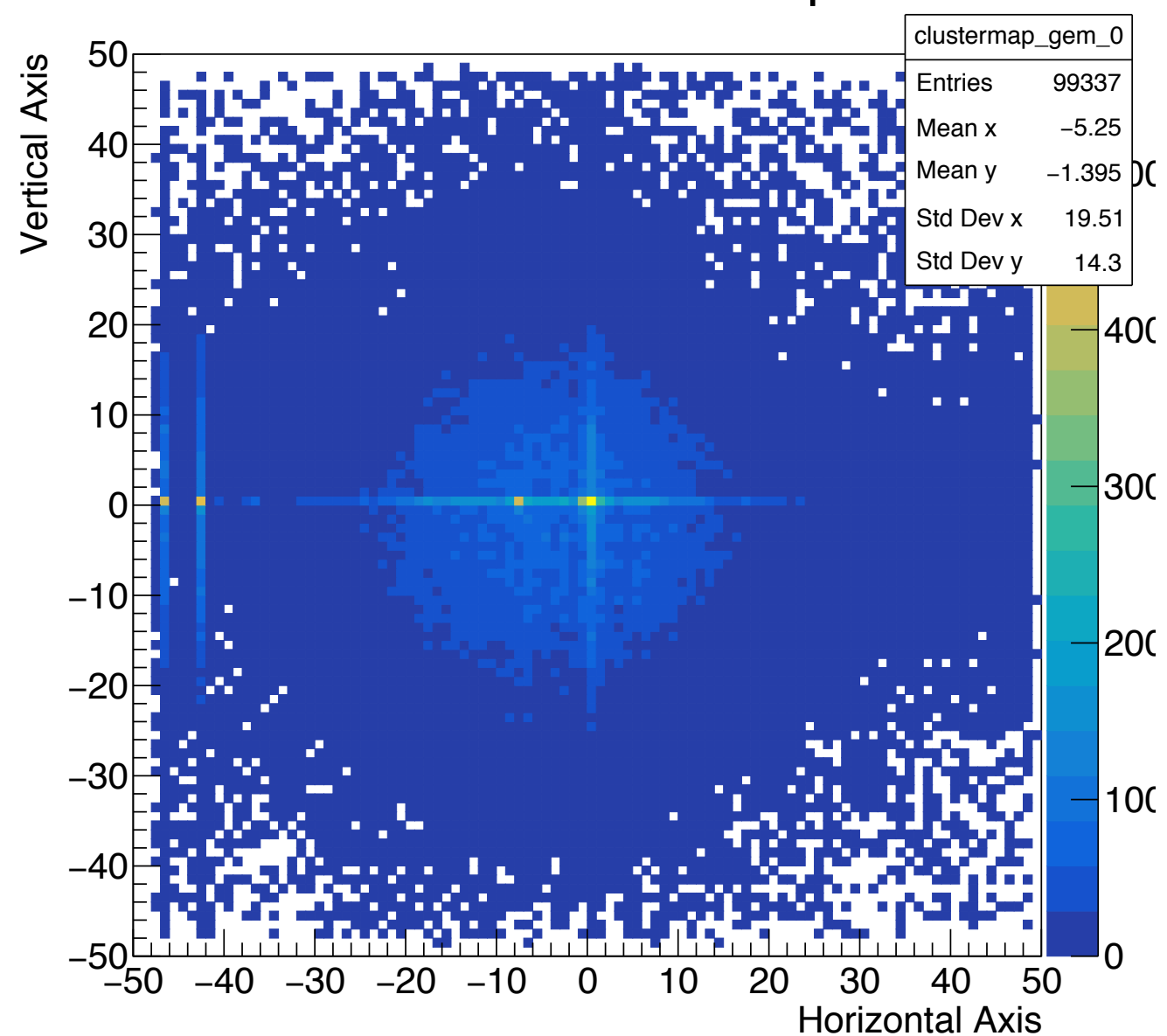
GEM performance: Cluster-finding

Update (06/12/2020) *by Ishara Fernando*

$$\mathrm{weight}(x_{chan}, y_{chan}) = \mathrm{Weight} + \mathrm{neighbor\_weight}$$

MIN_PEAK_ADC=200 & Run 6290