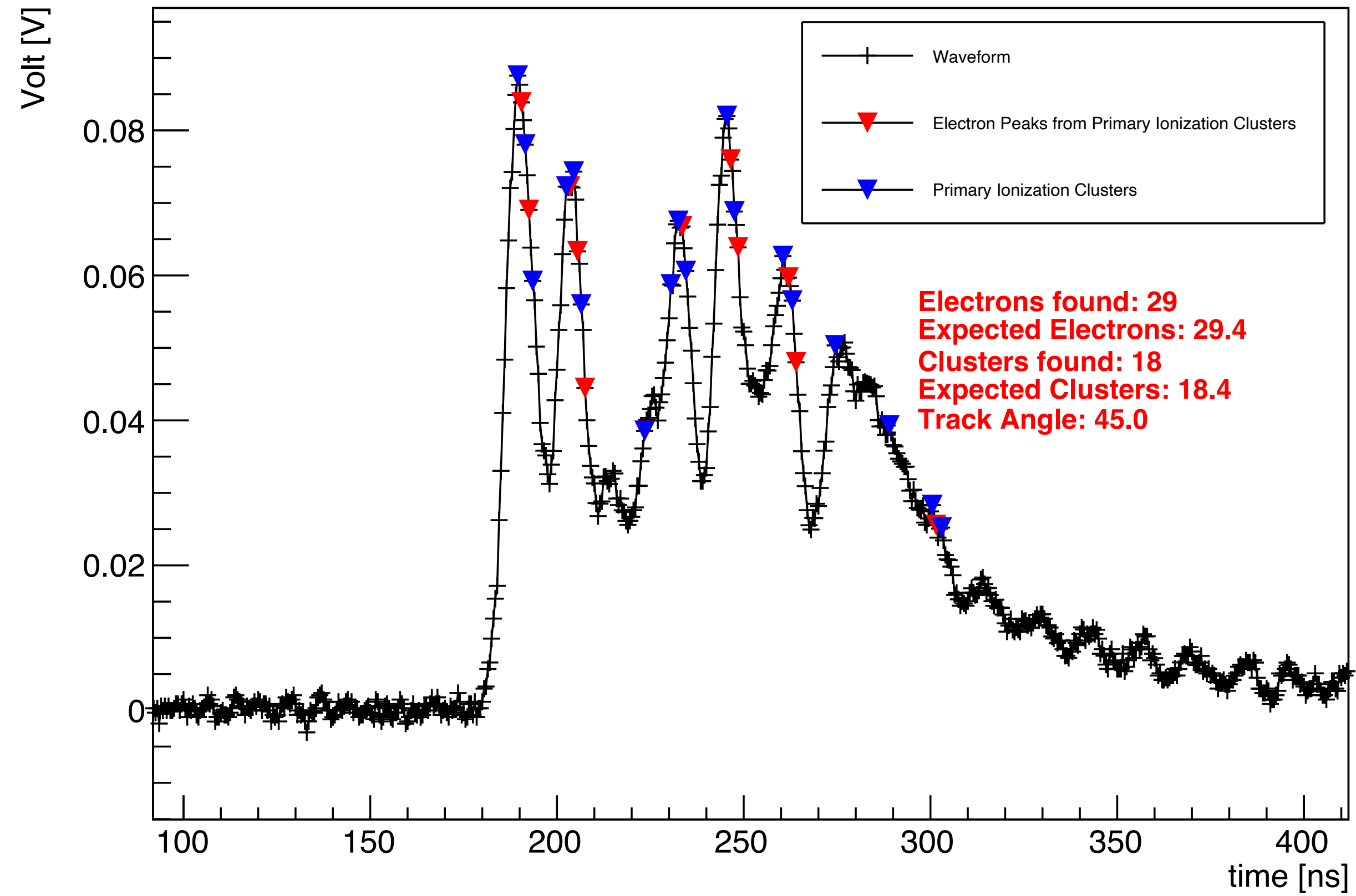


Test beam analysis update
using RTA algorithm

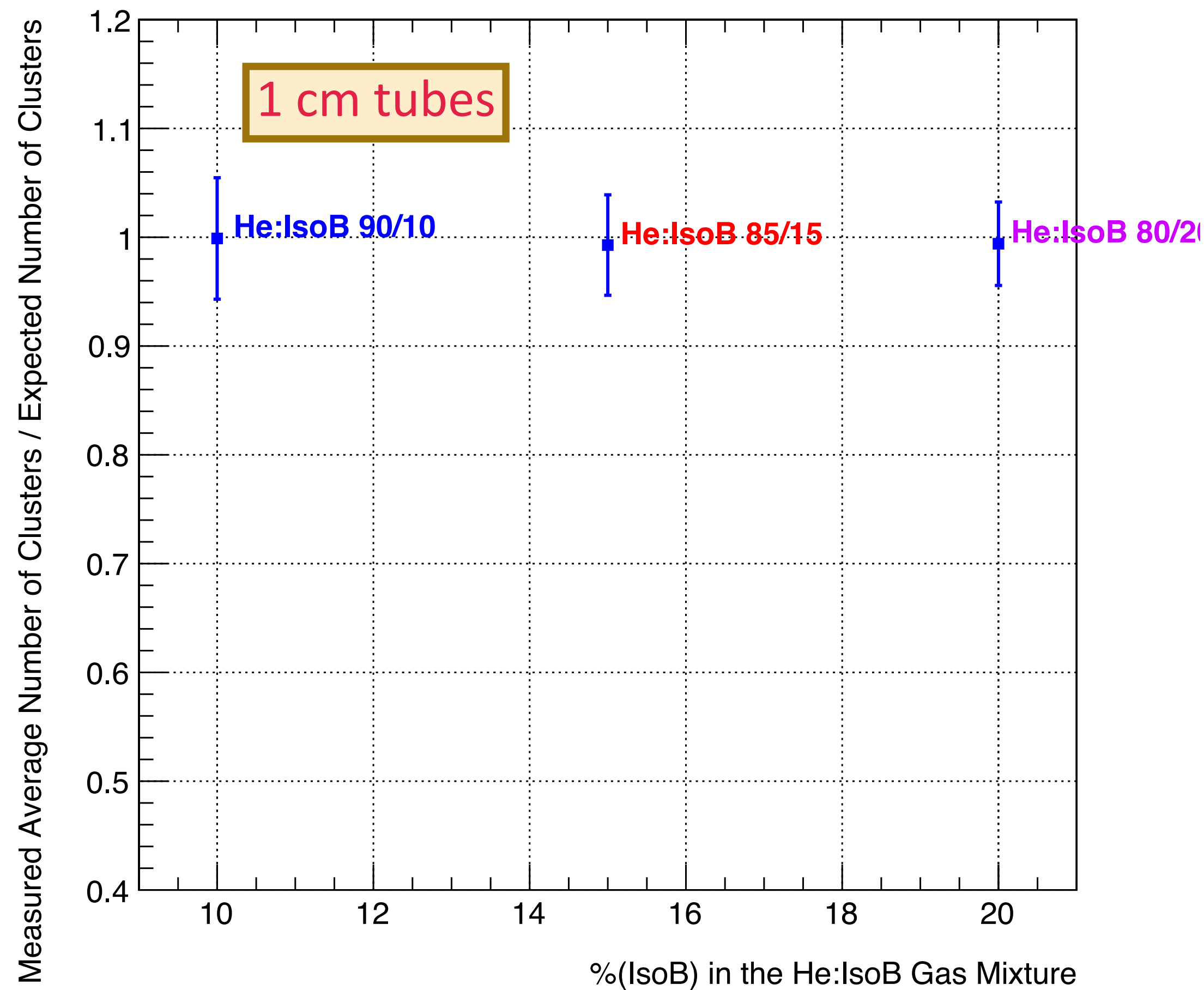
Example of the detected peaks and clusters in the waveform

Waveform signal Ch5 - Event 5 - Sense Wire Diameter 20 μm - Cell Size 1.0 cm - Track Angle 45.0 - run_10 - 2.0 GSa/s - Gas Mixture 80/20 0 - 90/10 1 - 85/15 0

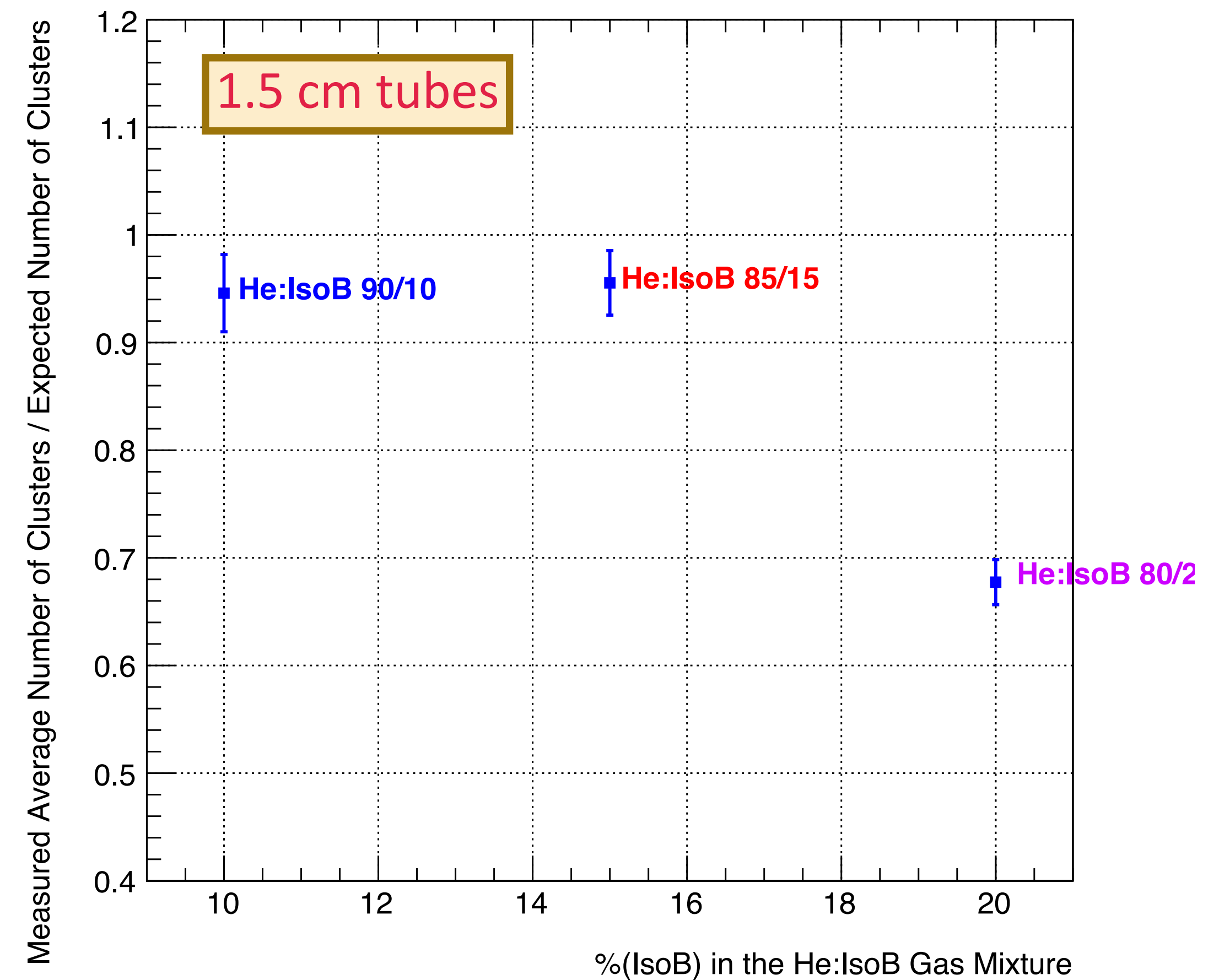


1- Check the performance for different gas Mix: (Gas Mix Scan)

Cluster Finding efficiency



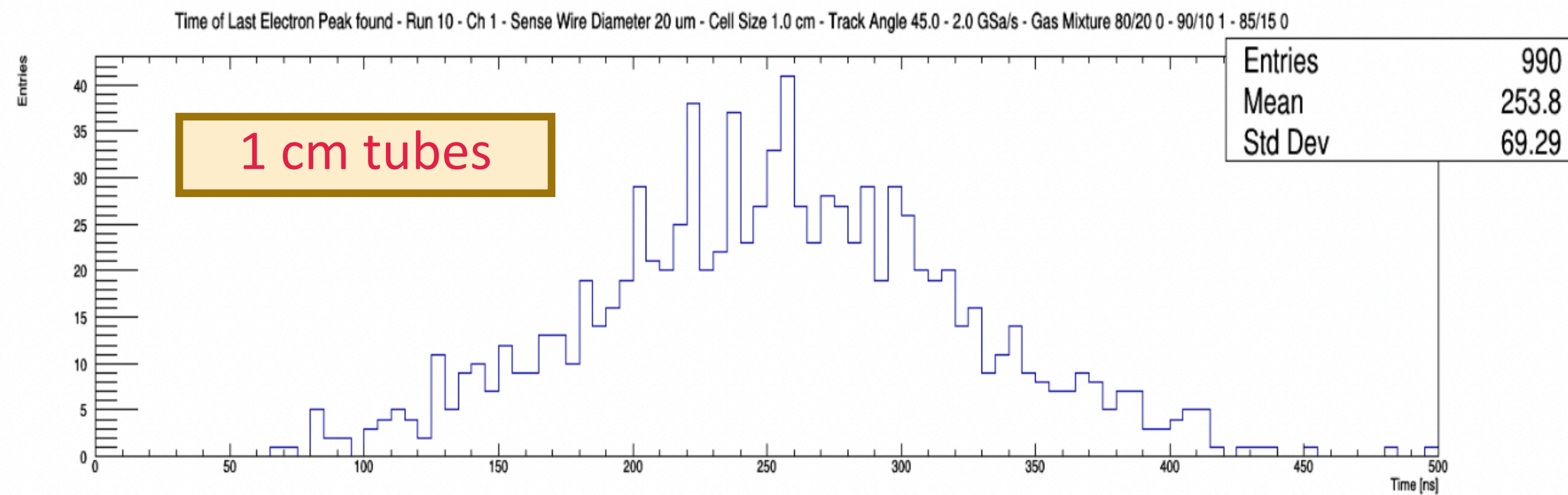
Cluster Finding efficiency



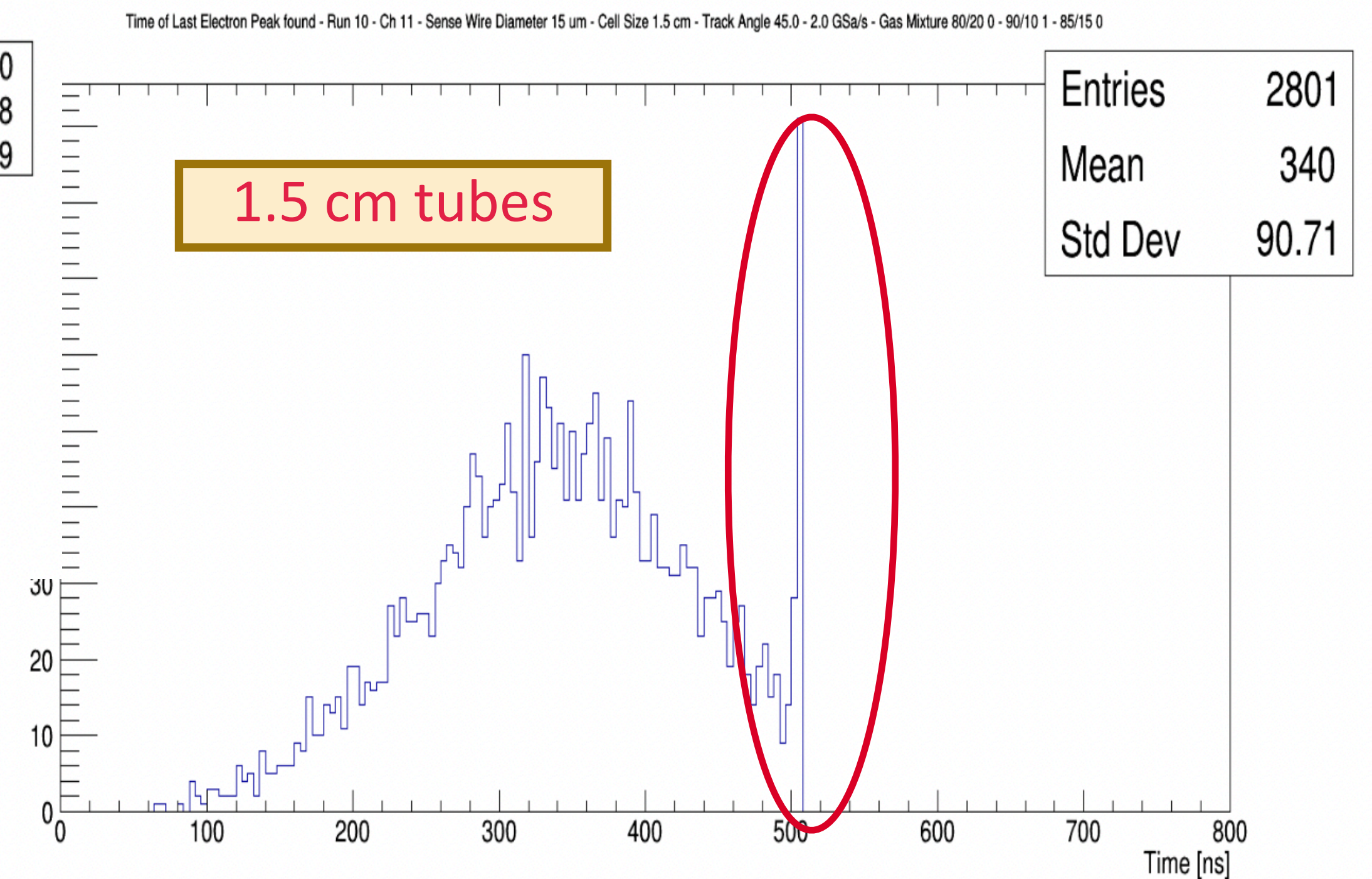
The clusterization cut has been optimised for each gas mixture to count for the change in the drift velocity.

Inefficiency 5% for 1.5 cm tubes using He:IsoB 90/10 & He:IsoB 85/15 and inefficiency ~ 30% using He:IsoB 80/20.

1.5 cm tubes inefficiency ~5-30%



We have 1024 bins,
@ 2GSa \Rightarrow 1/2 ns/bin
 \Rightarrow 512 ns.



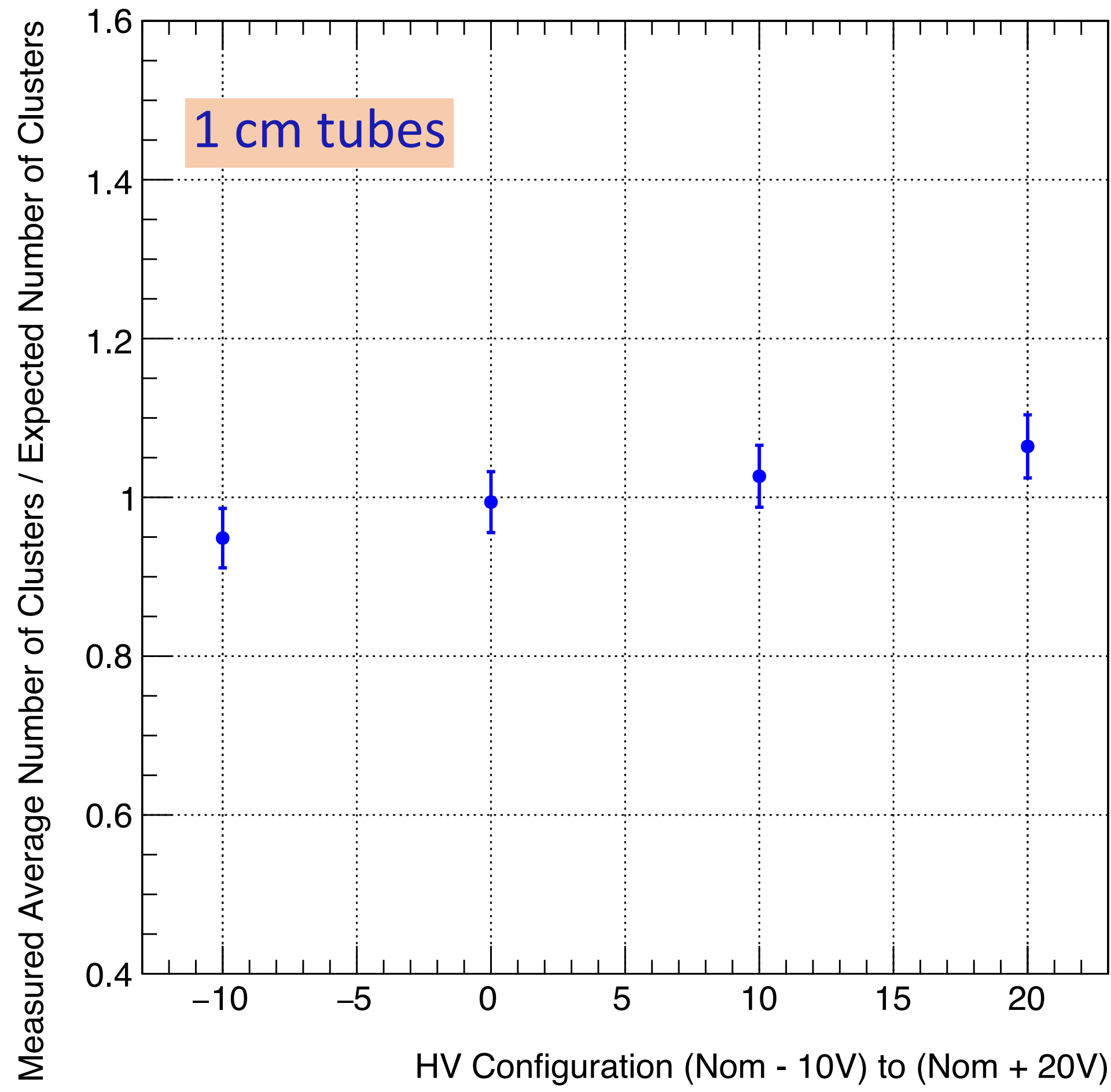
It is clear that we are losing a not negligible part of the clusters.

2- HV scan:

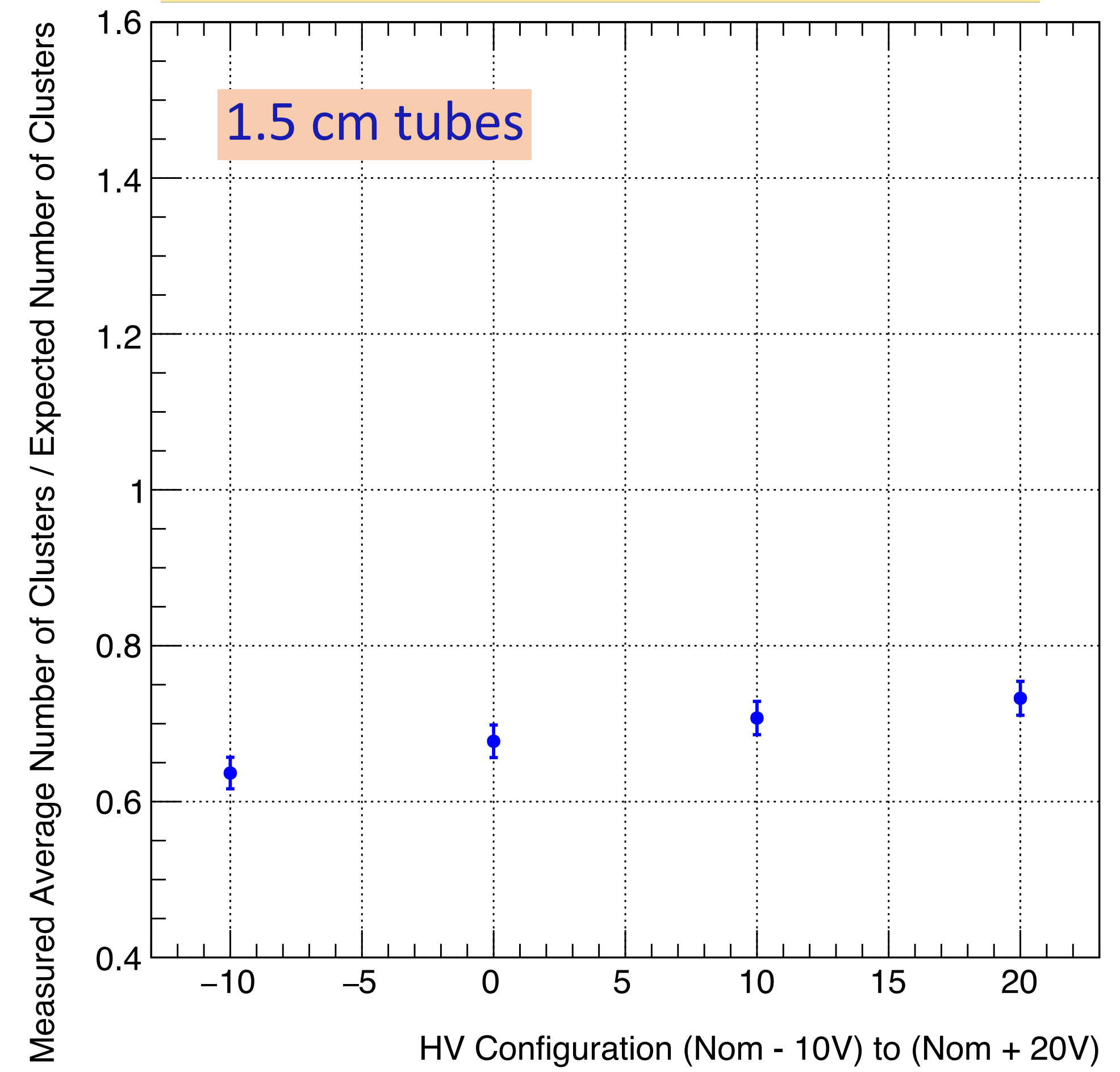
He:IsoB 80:20

Good stability with changing the HV

Cluster Finding efficiency



Cluster Finding efficiency

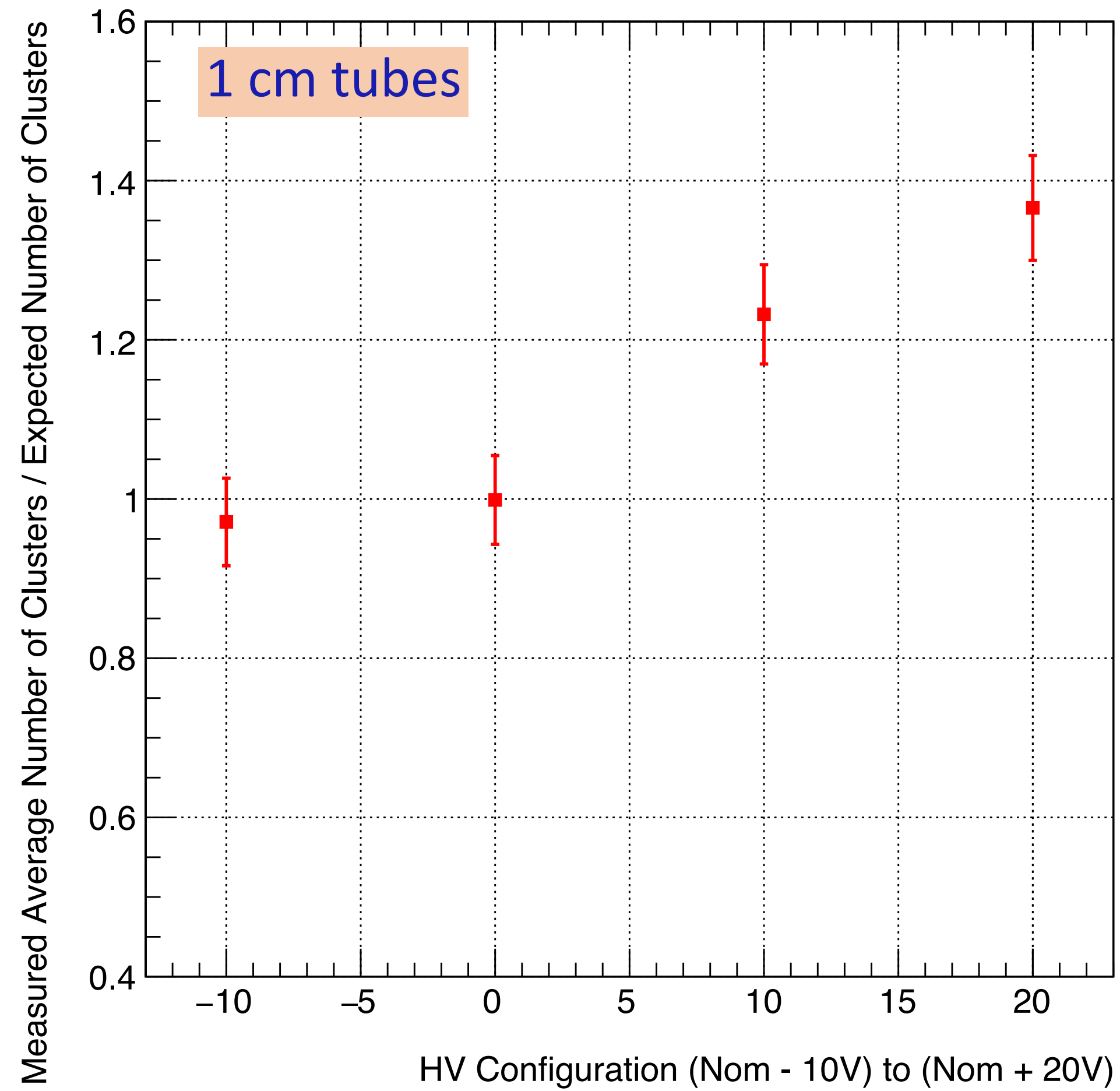


Inefficiency ~ 30% using He:IsoB 80/20 for 1.5 cm tubes

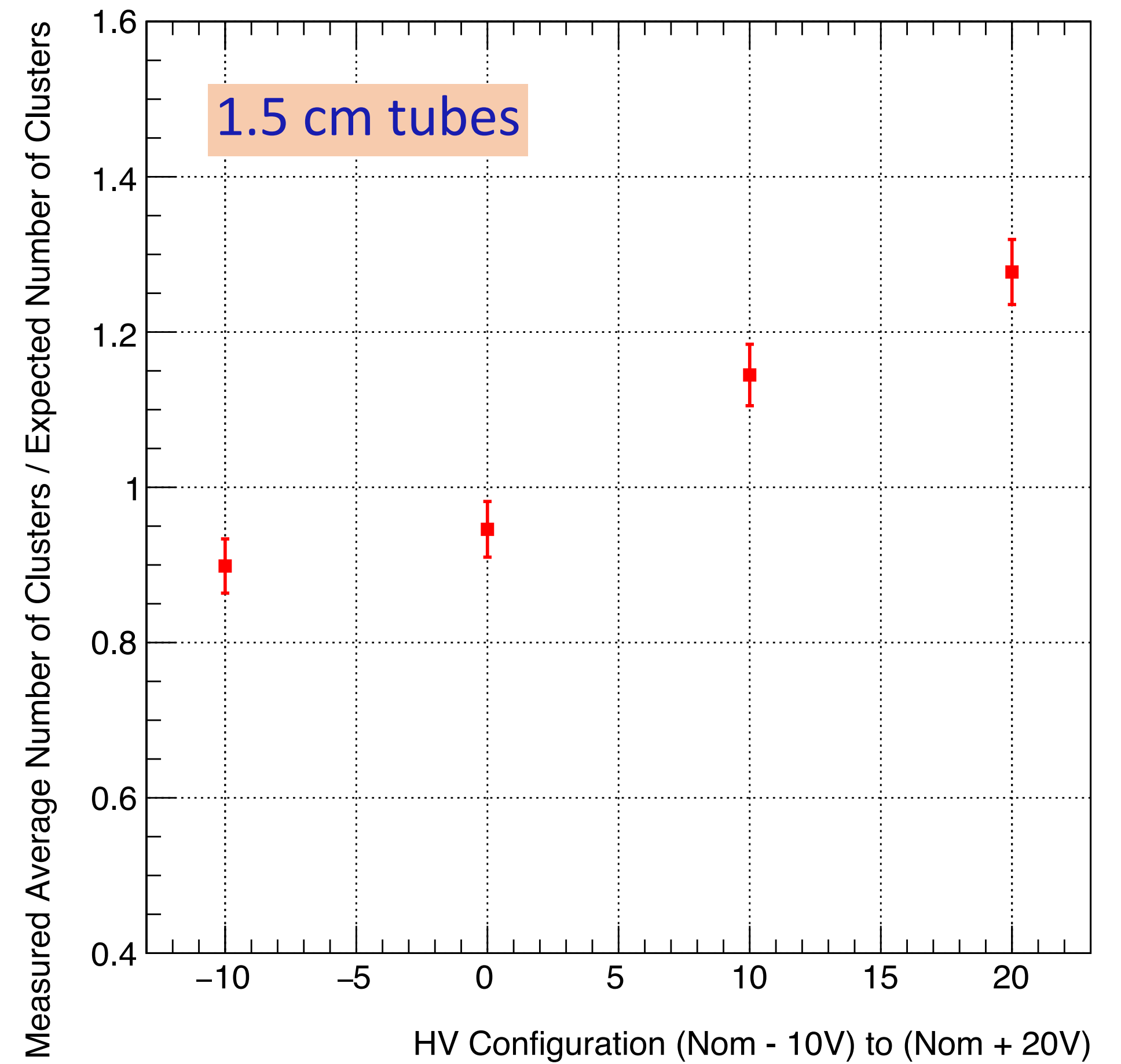
2- HV scan

He:IsoB 90:10

Cluster Finding efficiency

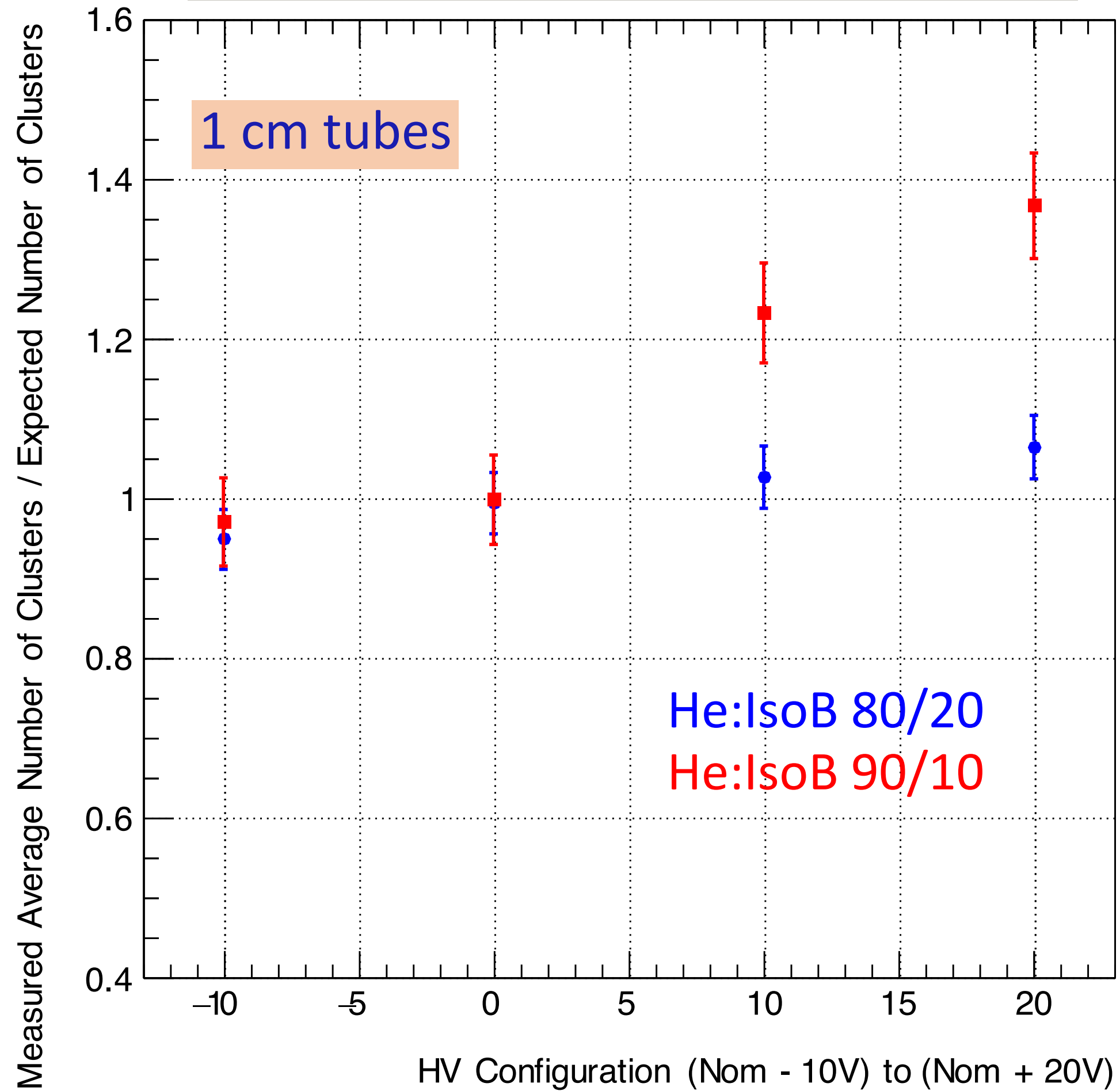


Cluster Finding efficiency



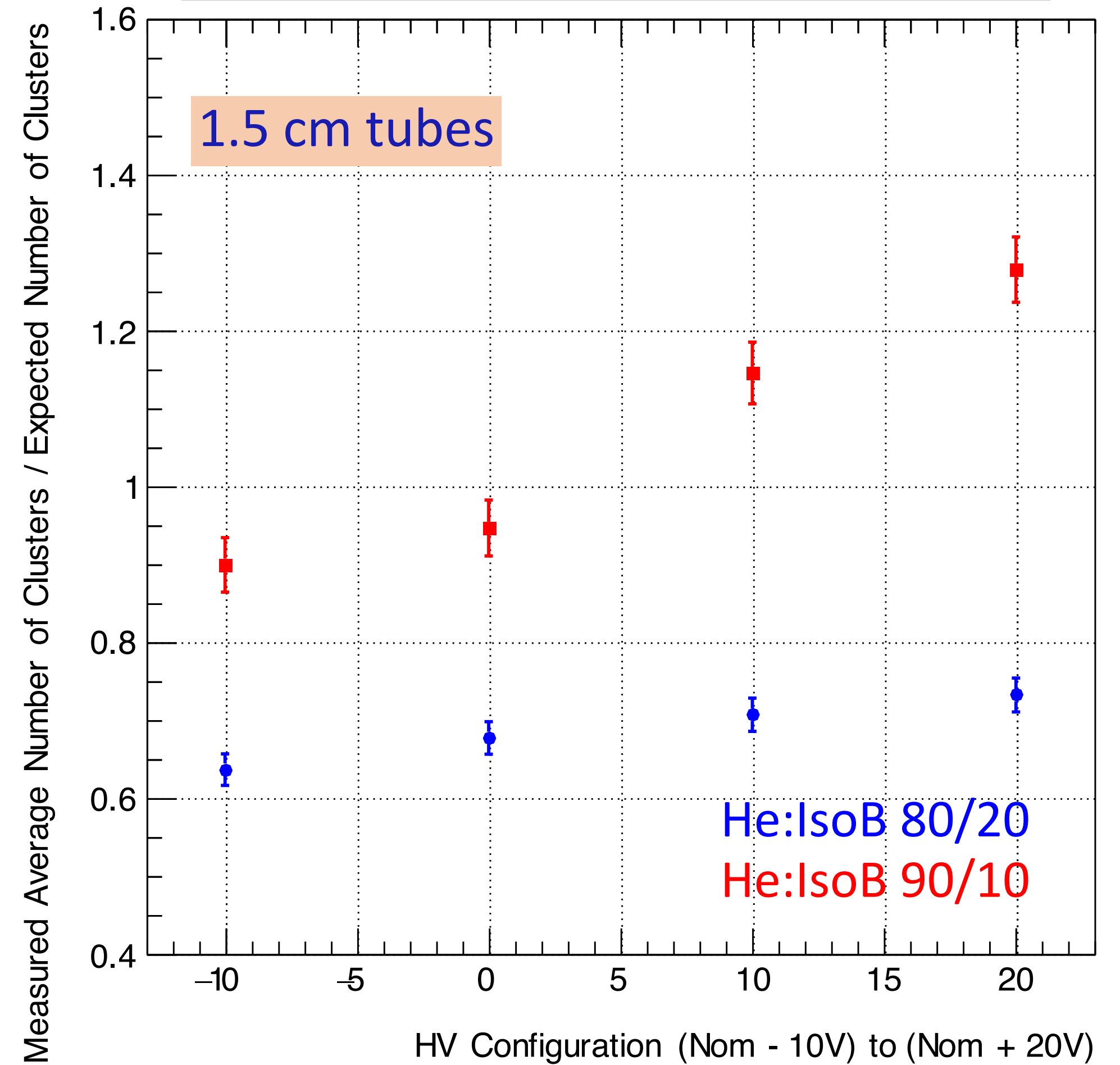
2- HV scan

Cluster Finding efficiency



7

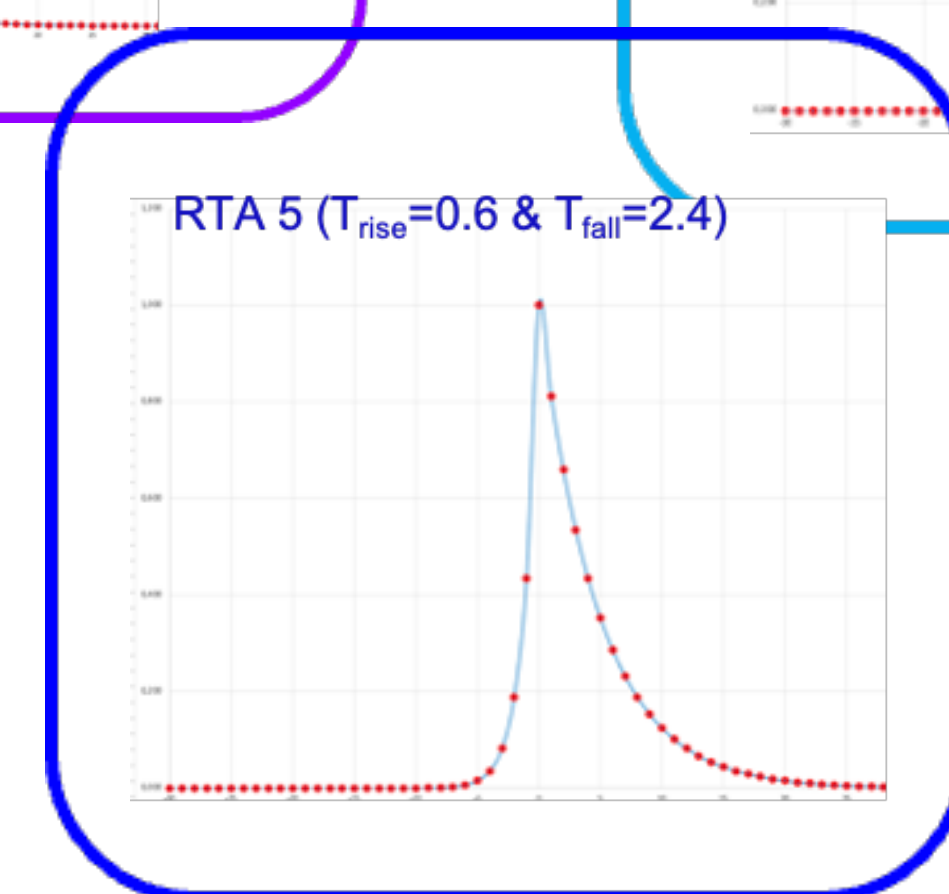
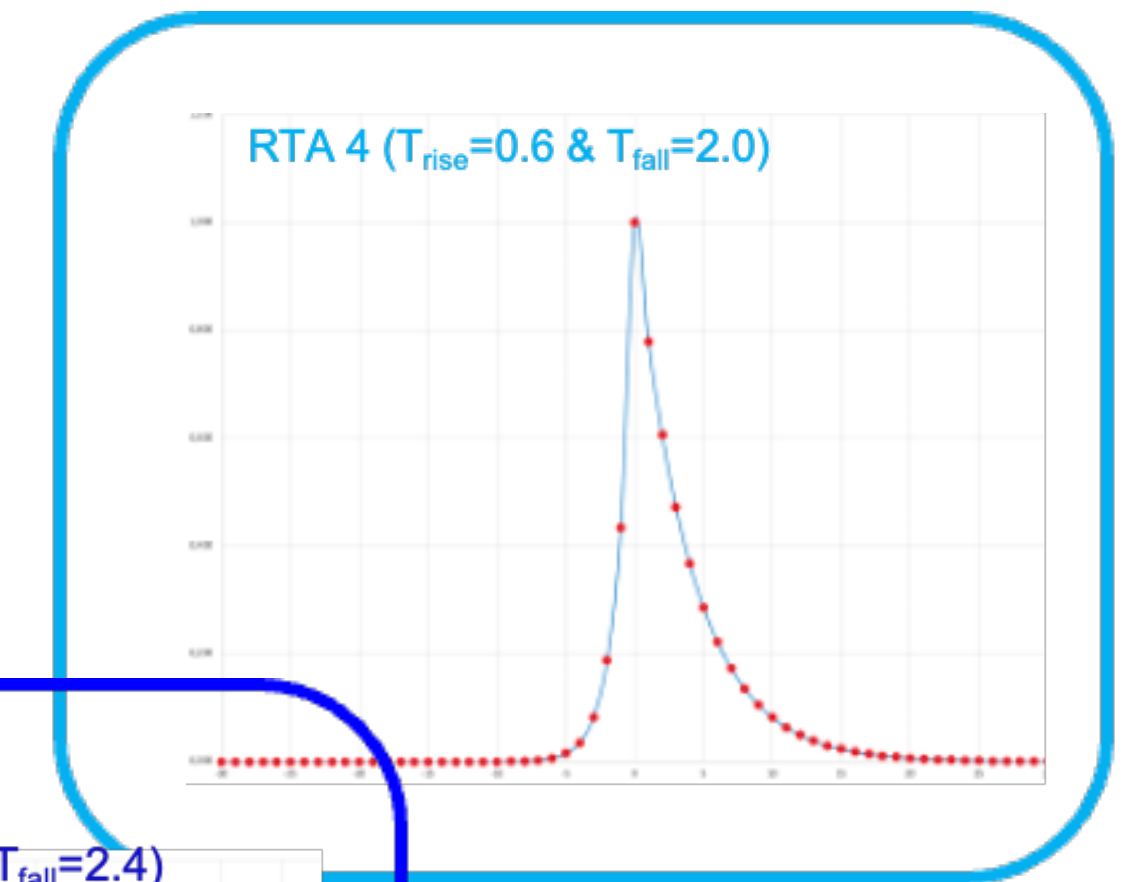
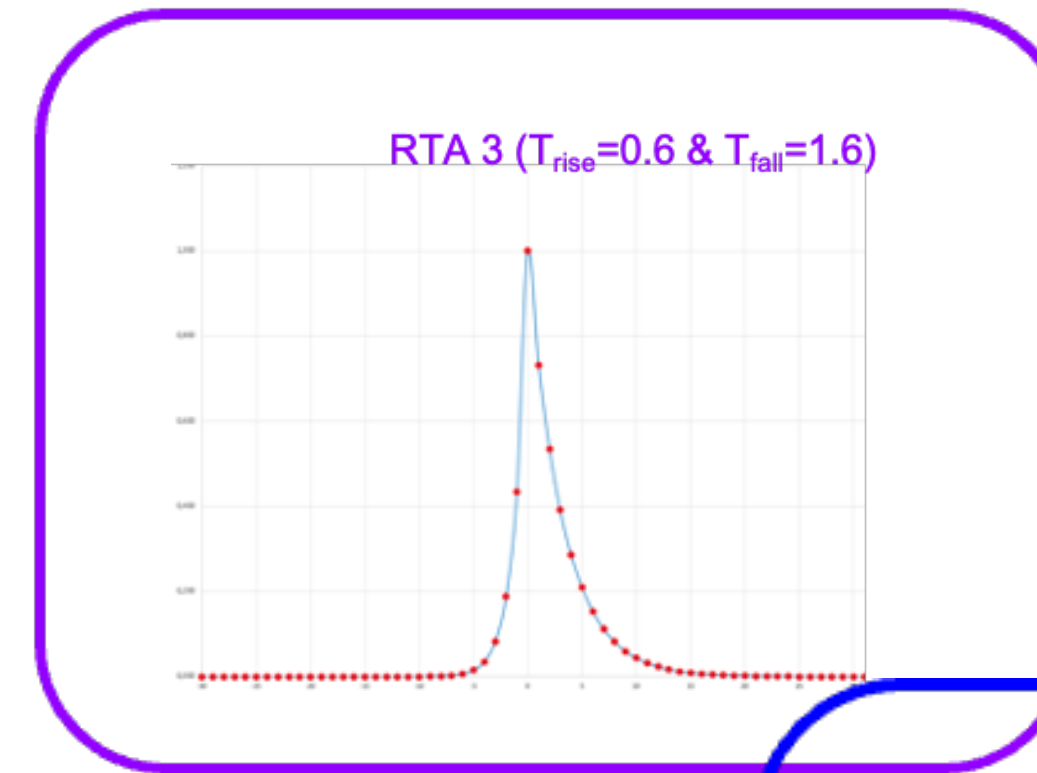
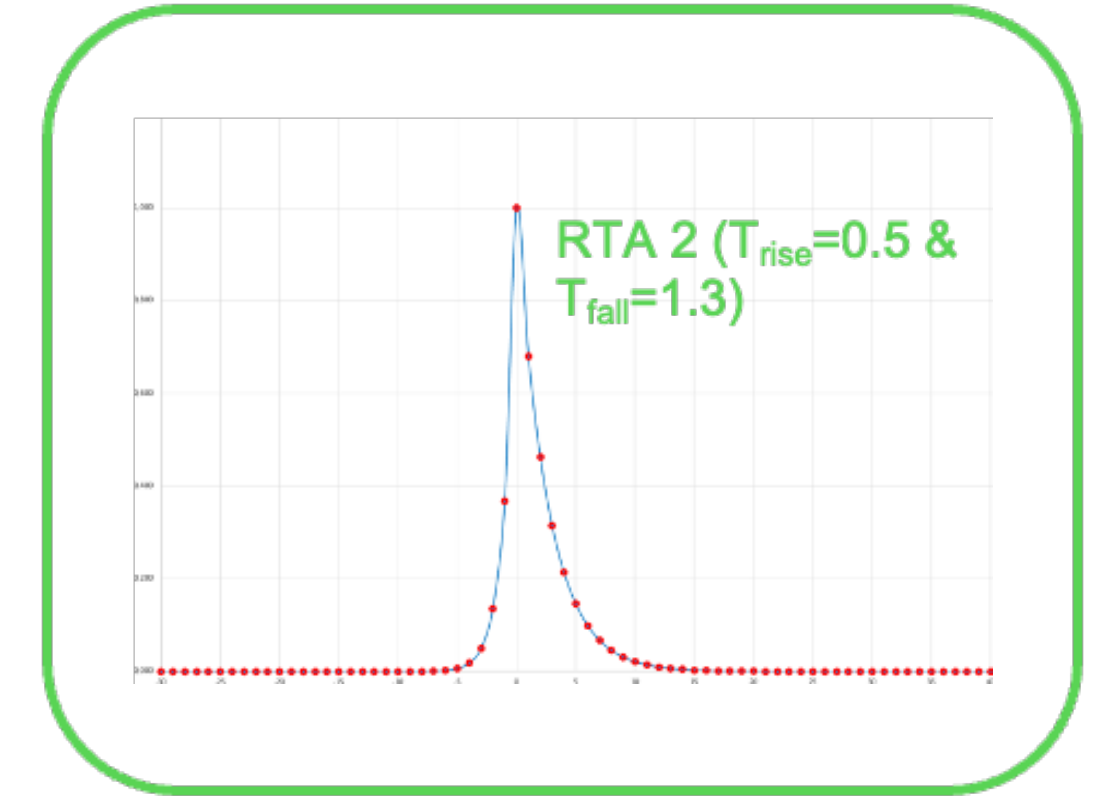
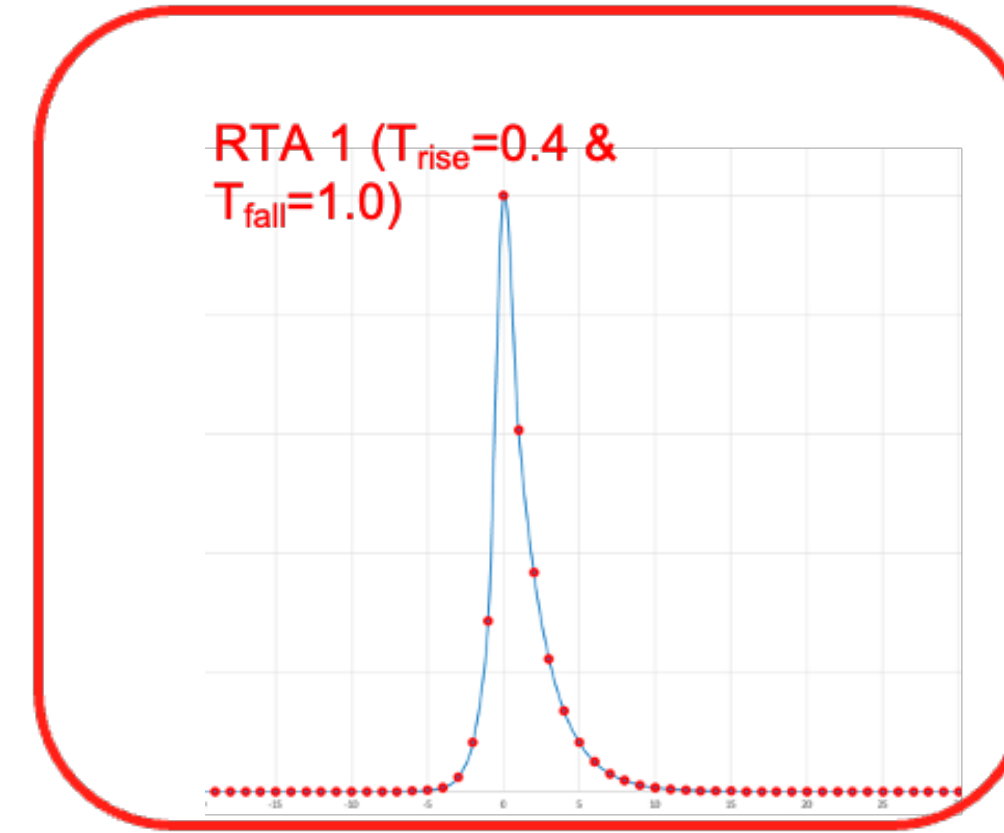
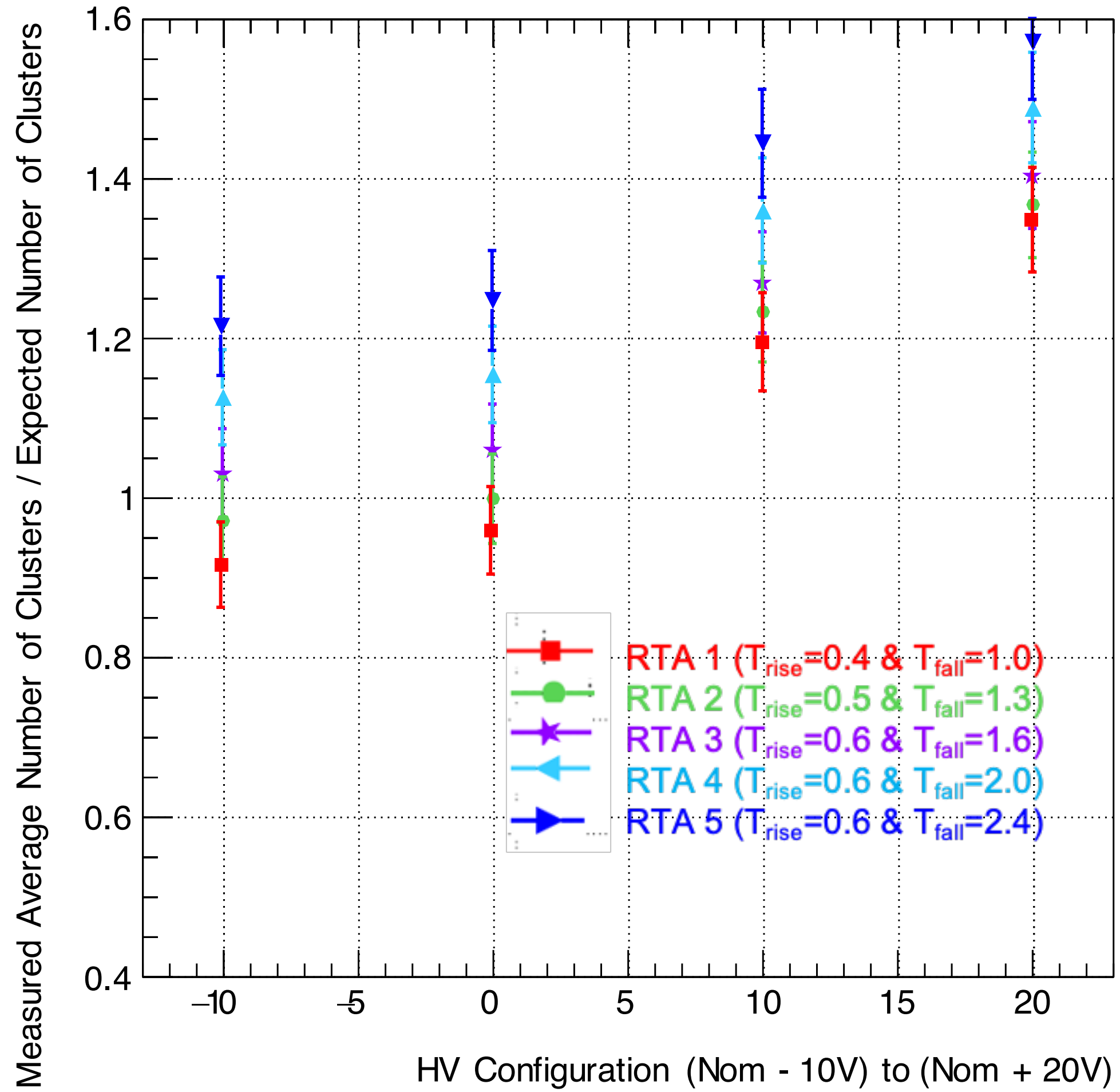
Cluster Finding efficiency



4- RTA SCAN

1 cm tubes

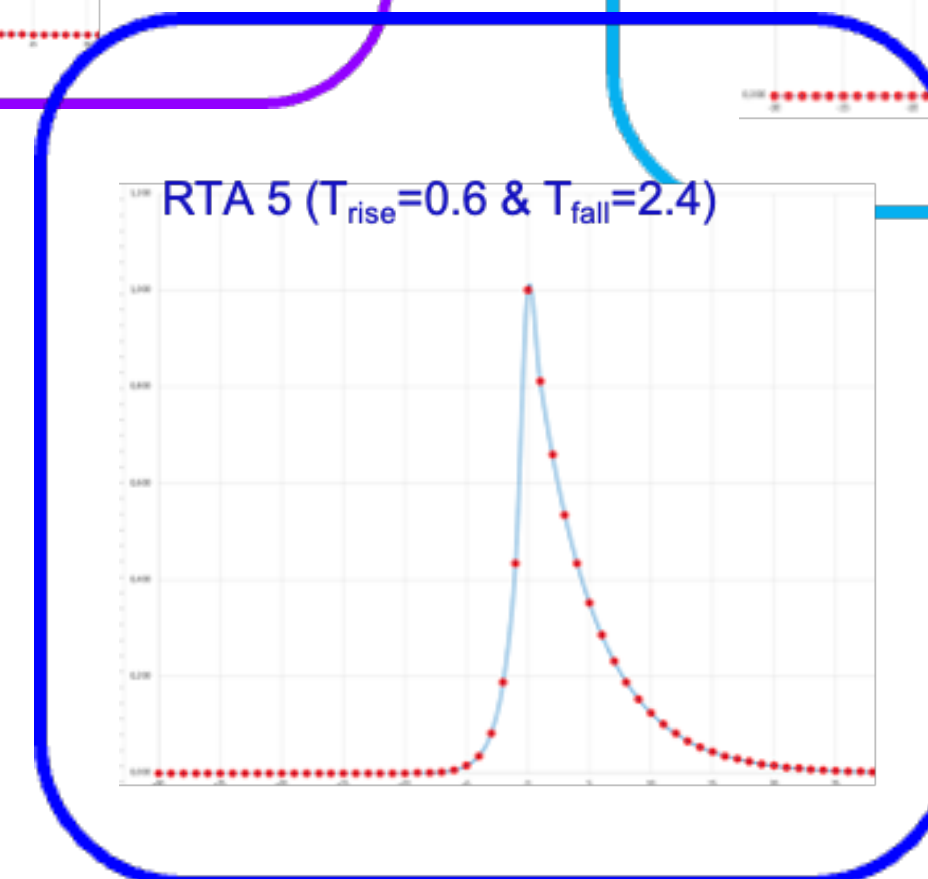
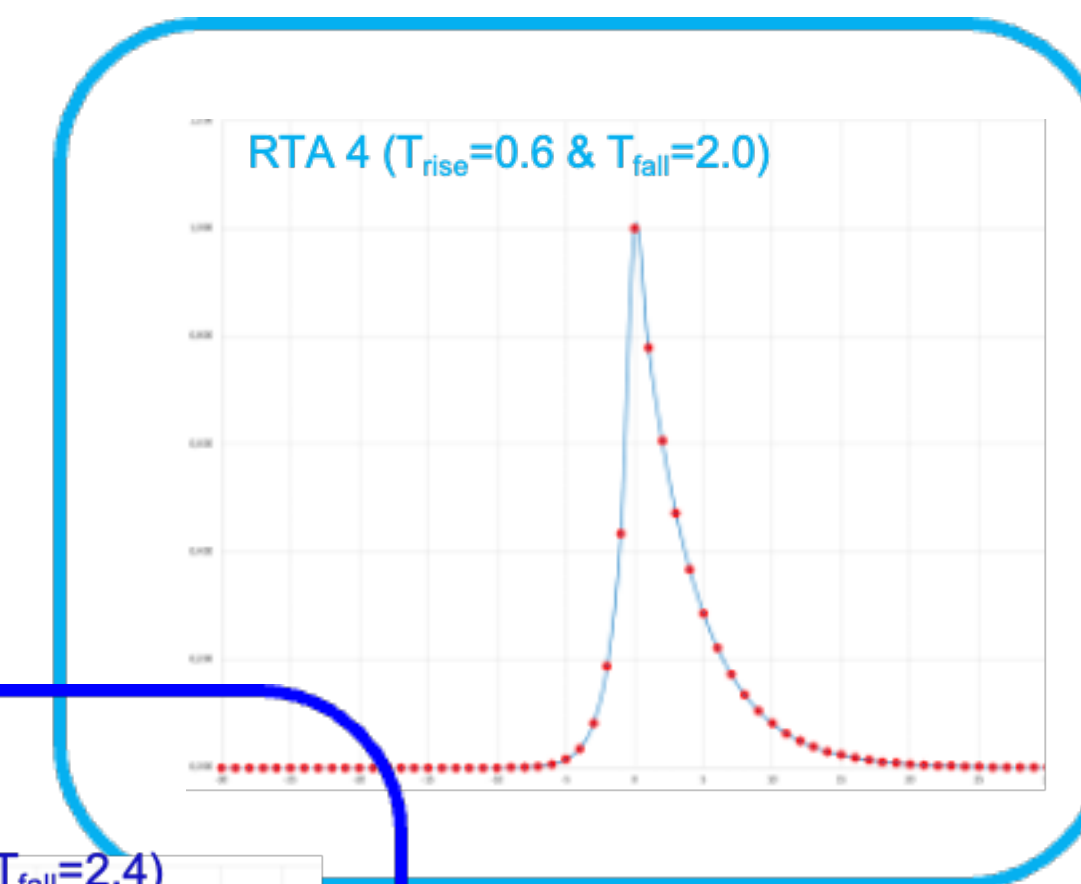
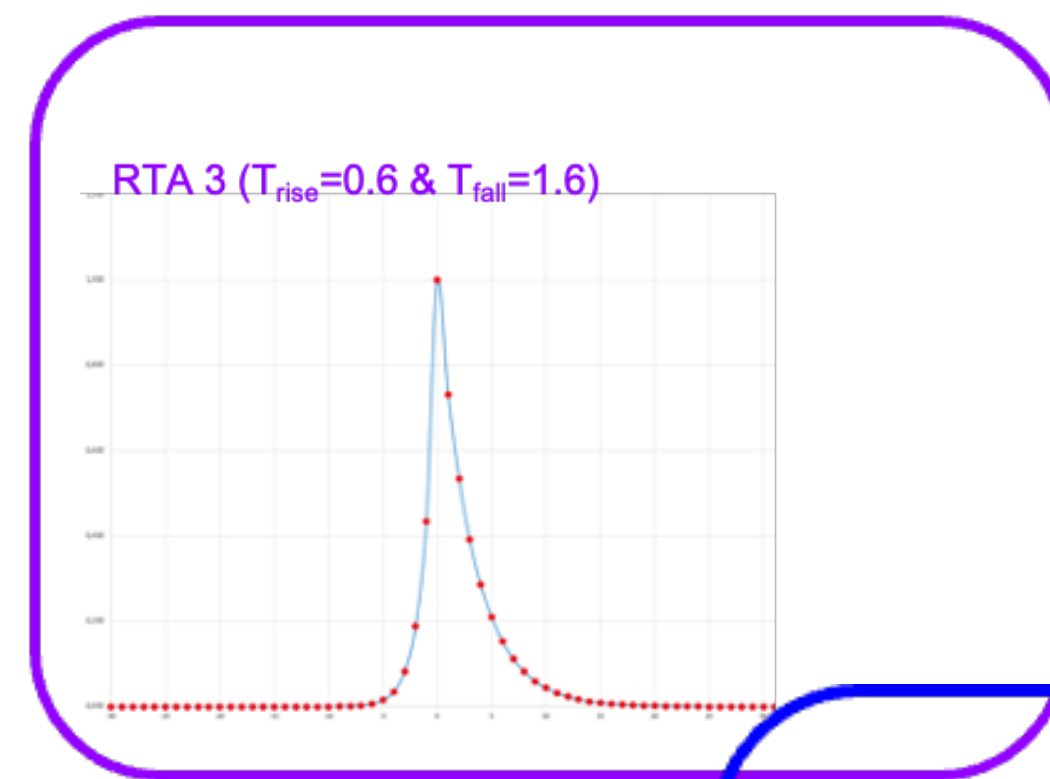
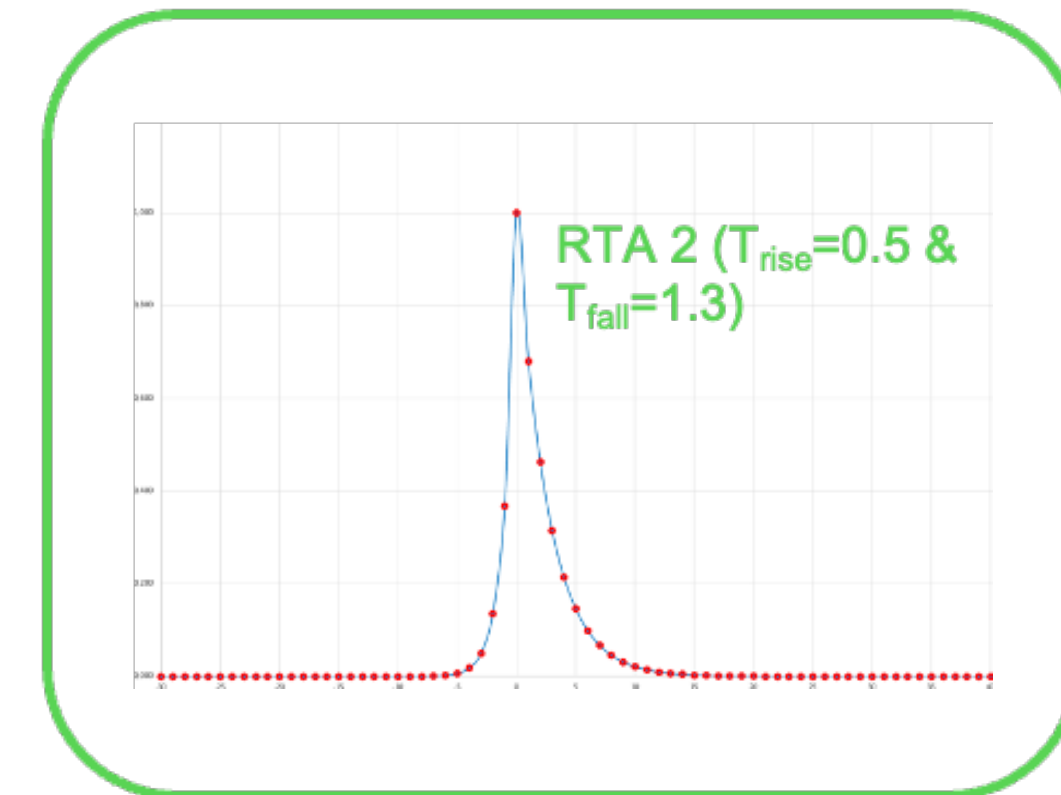
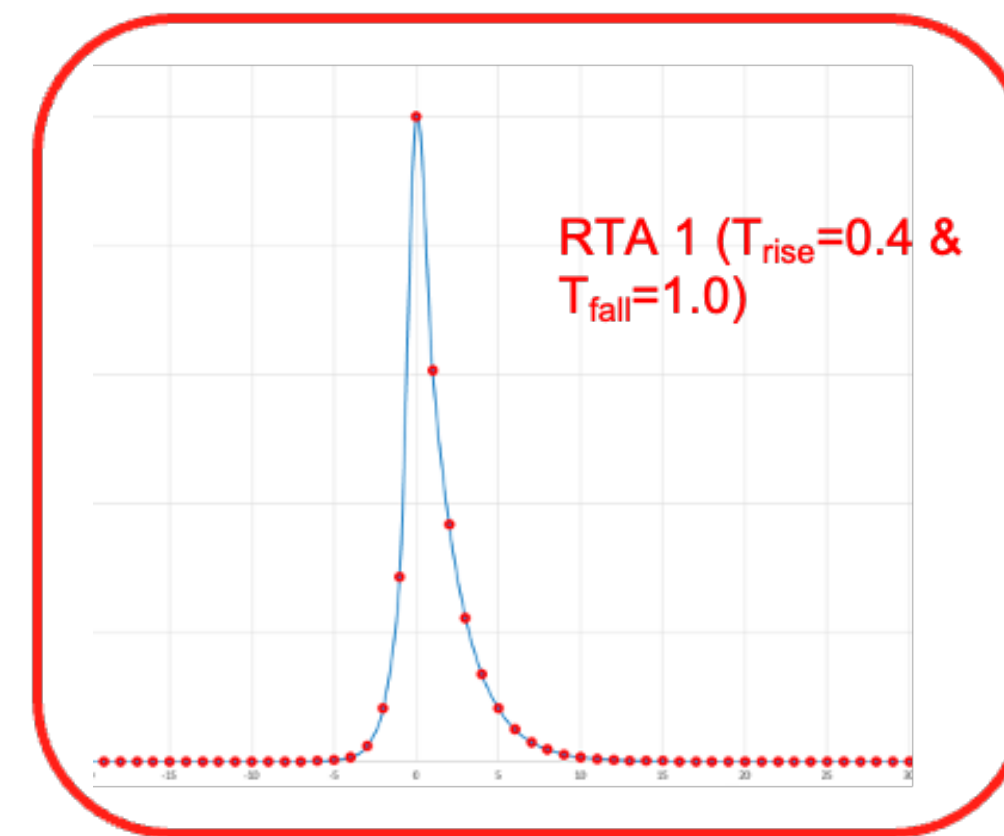
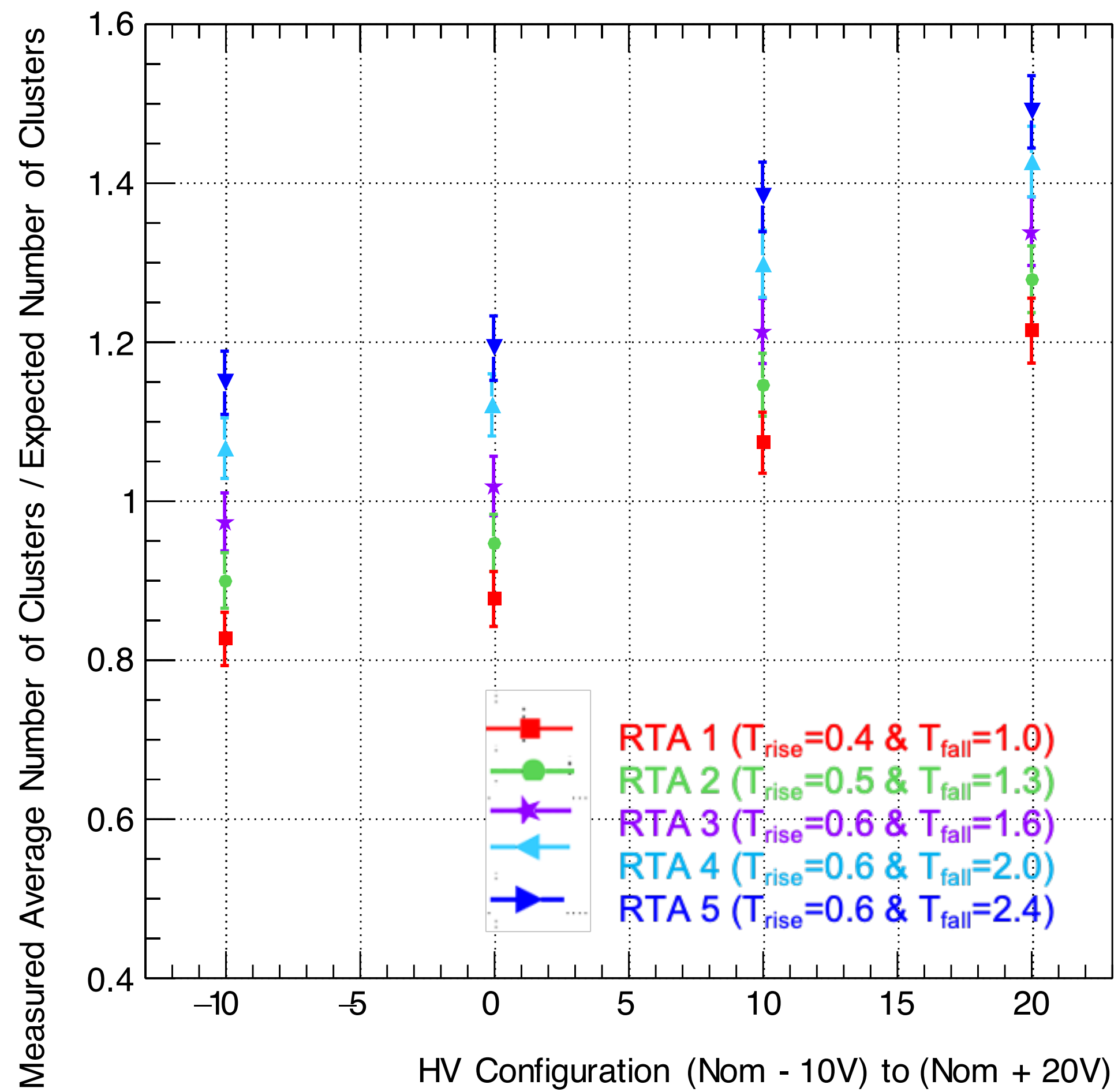
Cluster Finding efficiency



4- RTA scan

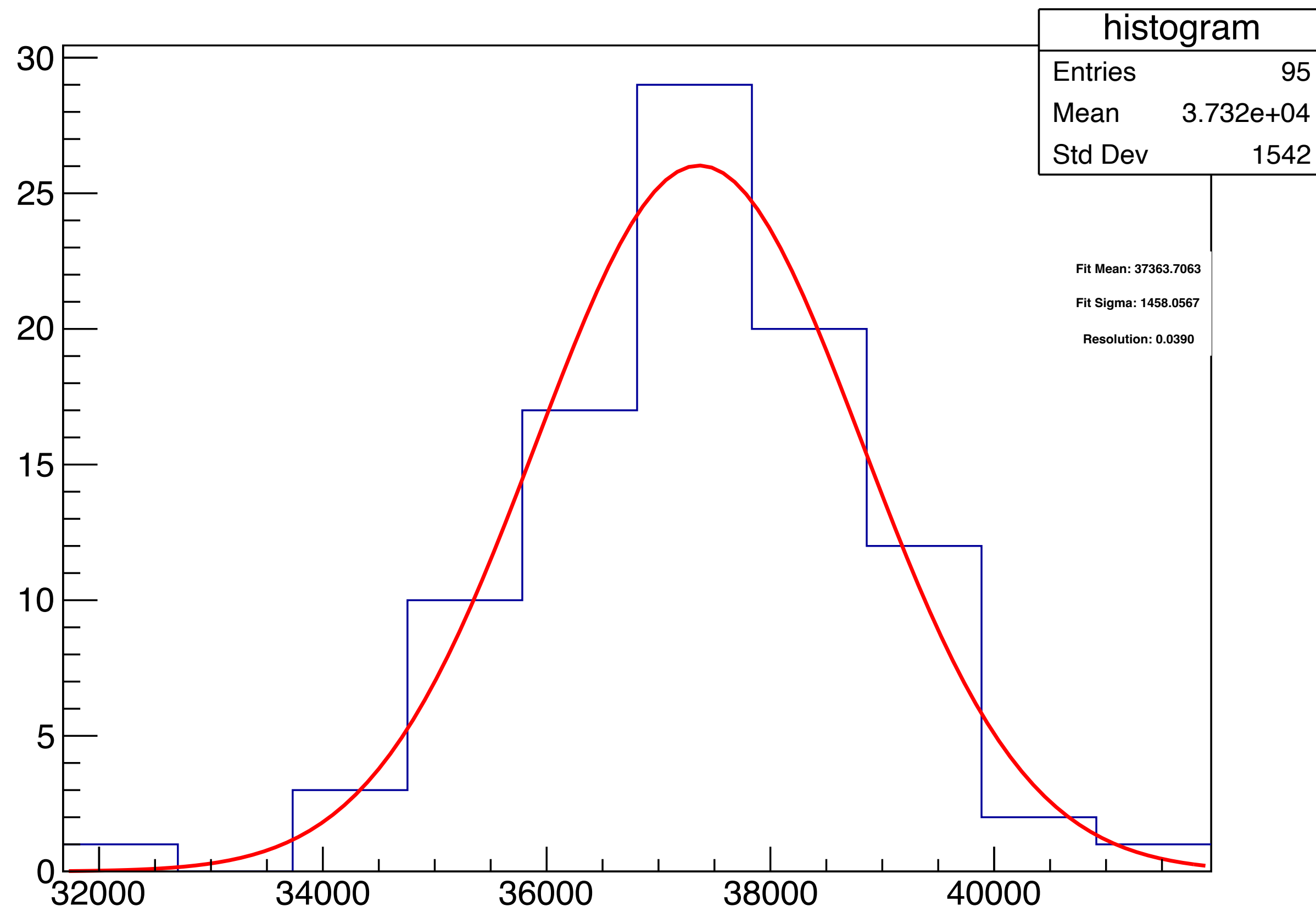
1.5 cm tubes

Cluster Finding efficiency



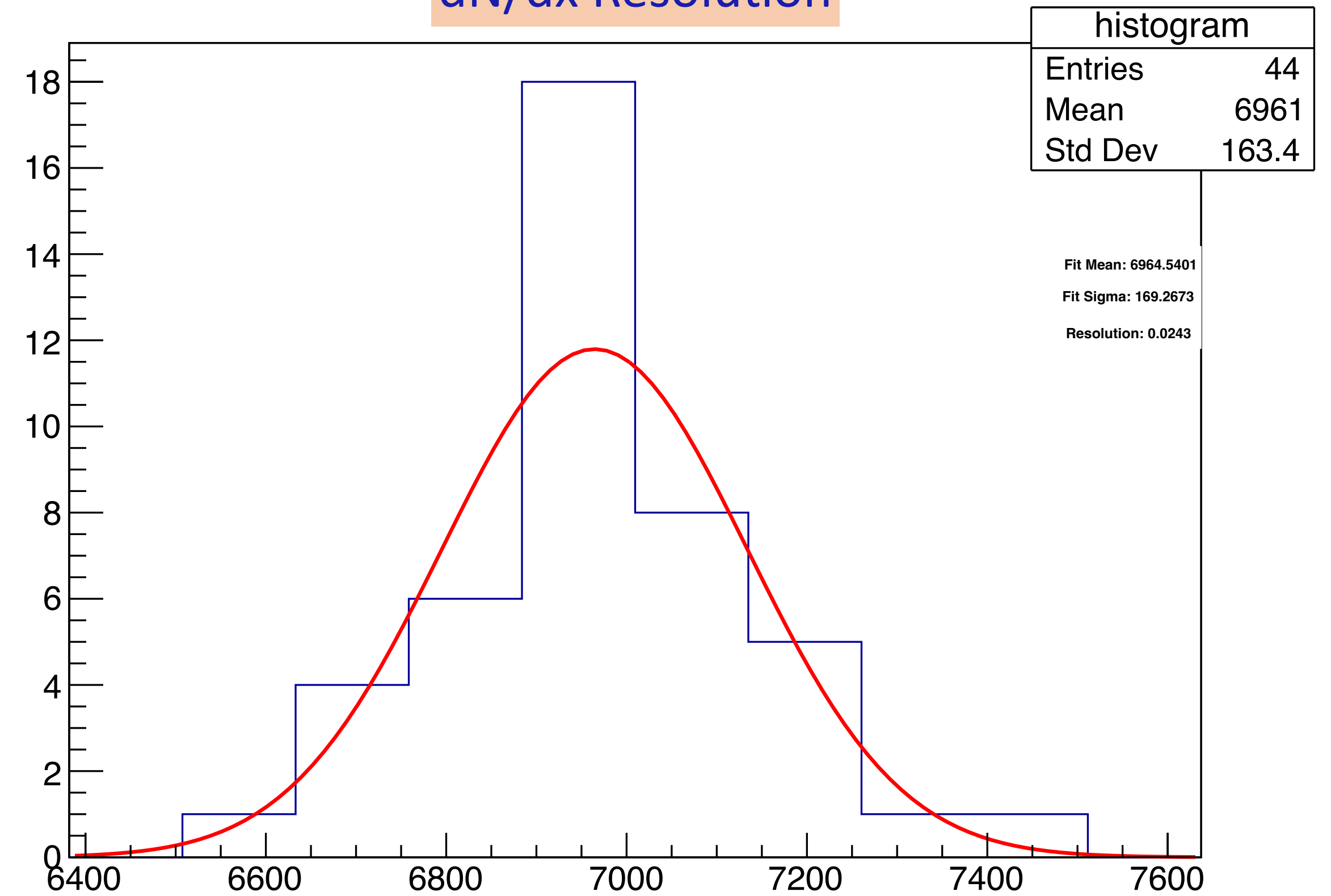
S- Resolution Study

dE/dx Resolution
|MEAN|σ|X|



@2m long track we have dE/dx resolution 3.9%

dN/dx Resolution



@2m long track we have dN/dx resolution 2.4%