Ecogas Study
Rate Scan - Data Analysis

Amrutha Samalan

Overview

- **ECOGAS1: 45% HFO, 50% CO2, 4% iC4H10, 1% SF6**
- **ECOGAS2: 35% HFO, 60% CO2, 4% iC4H10, 1% SF6**
- **Performed rate scans for five different ABS values with ECOGAS 2 on March 11 (Thursday) for the CMS-GT chamber**
- **Scan Id and ABS Values:**

  ScanID 00145: ABS 69

  ScanID 00146: ABS 22

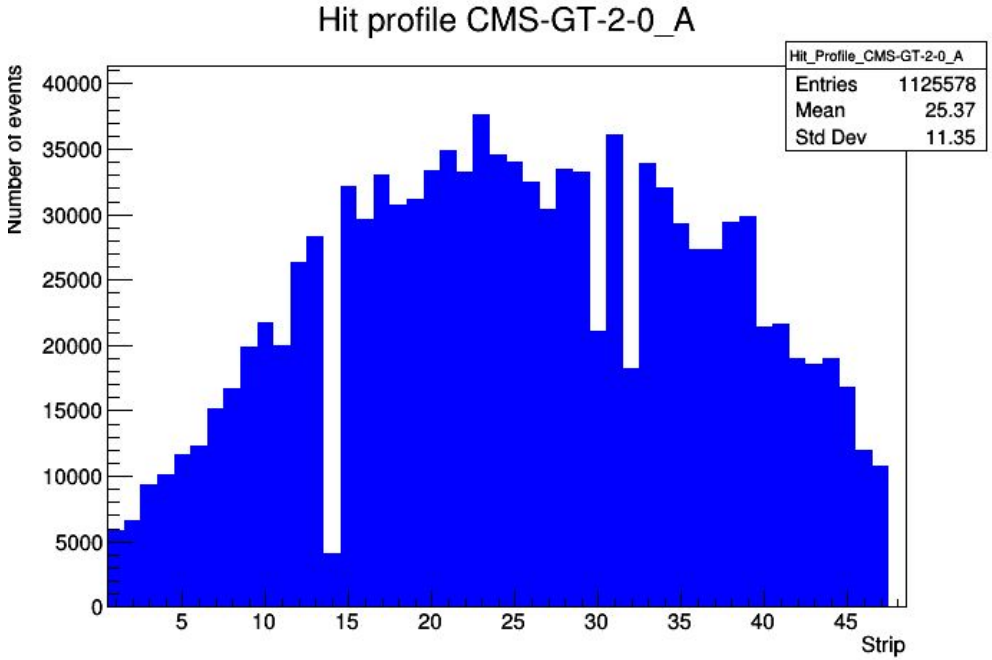
  ScanID 00147: ABS 15

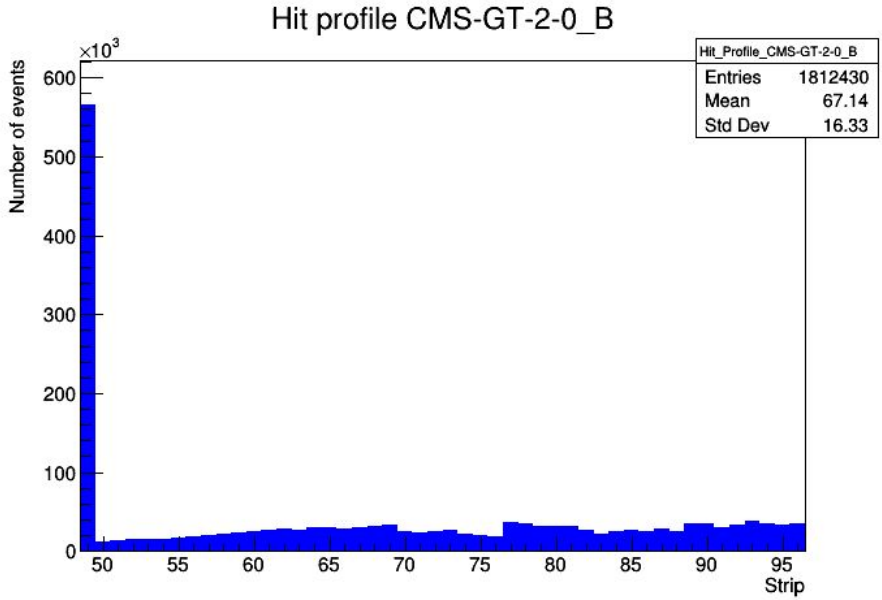
  ScanID 00148: ABS 10

  ScanID 00149: ABS 6.9

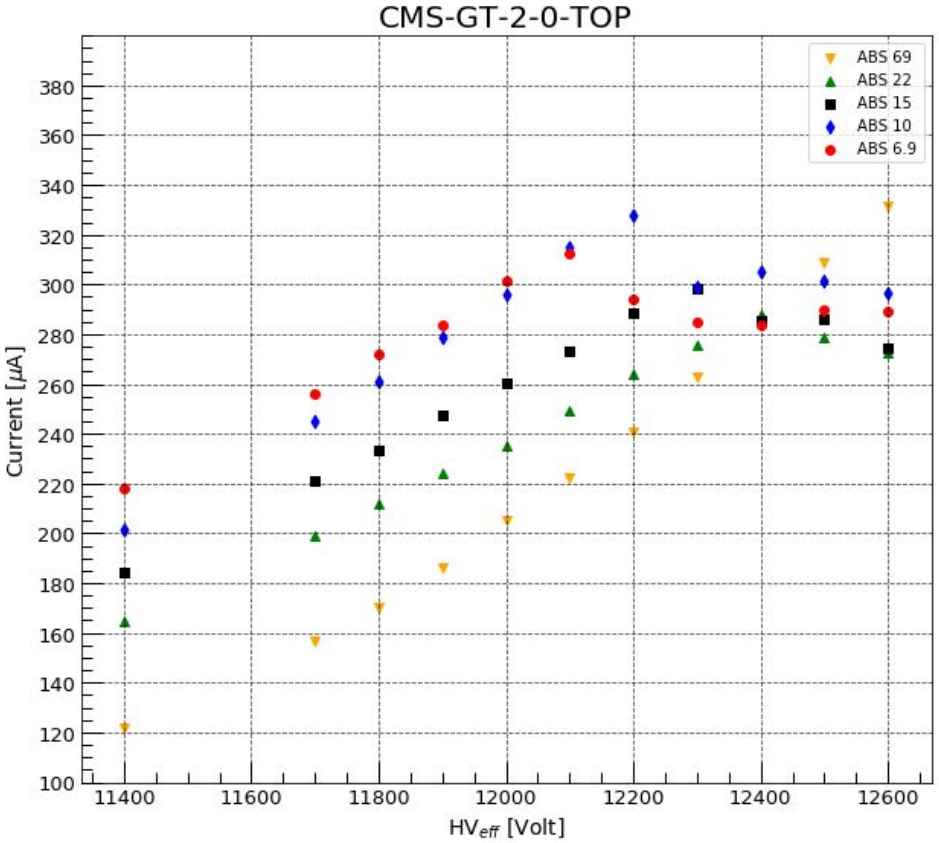
- **Analysis performed to study the currents, cluster rate, cluster Size and cluster multiplicity for both gaps- CMS-GT-2-0-TOP (partition A) and CMS-GT-2-0-BOT (partition B)**

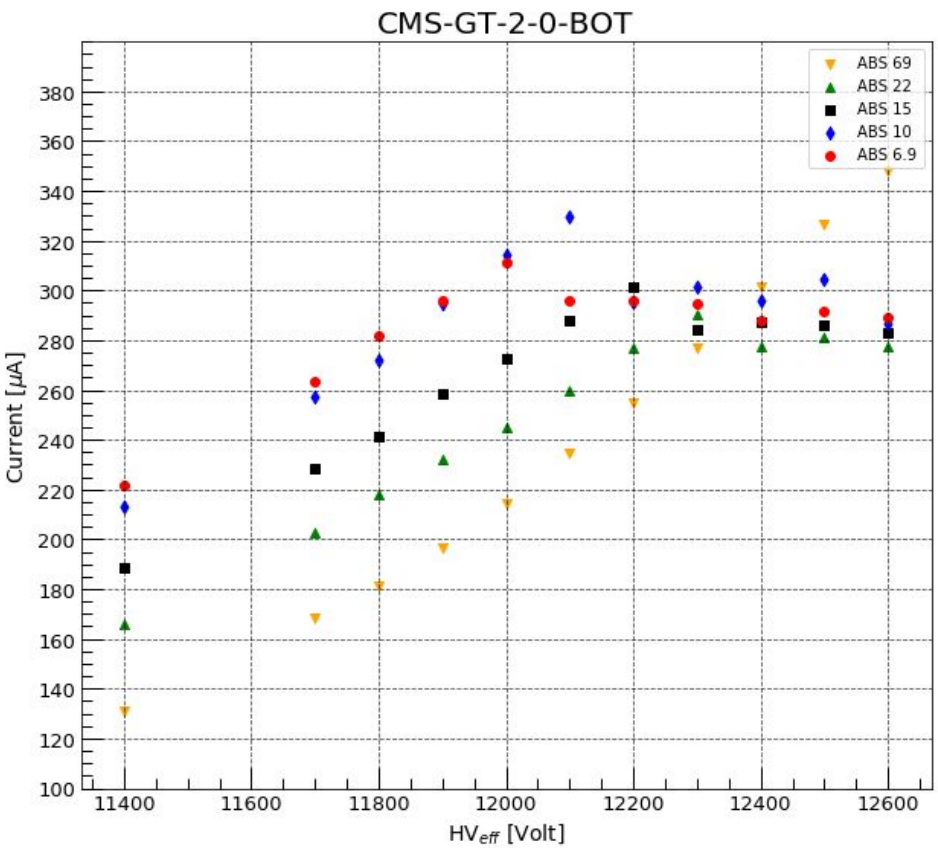
Hit profiles of the gaps



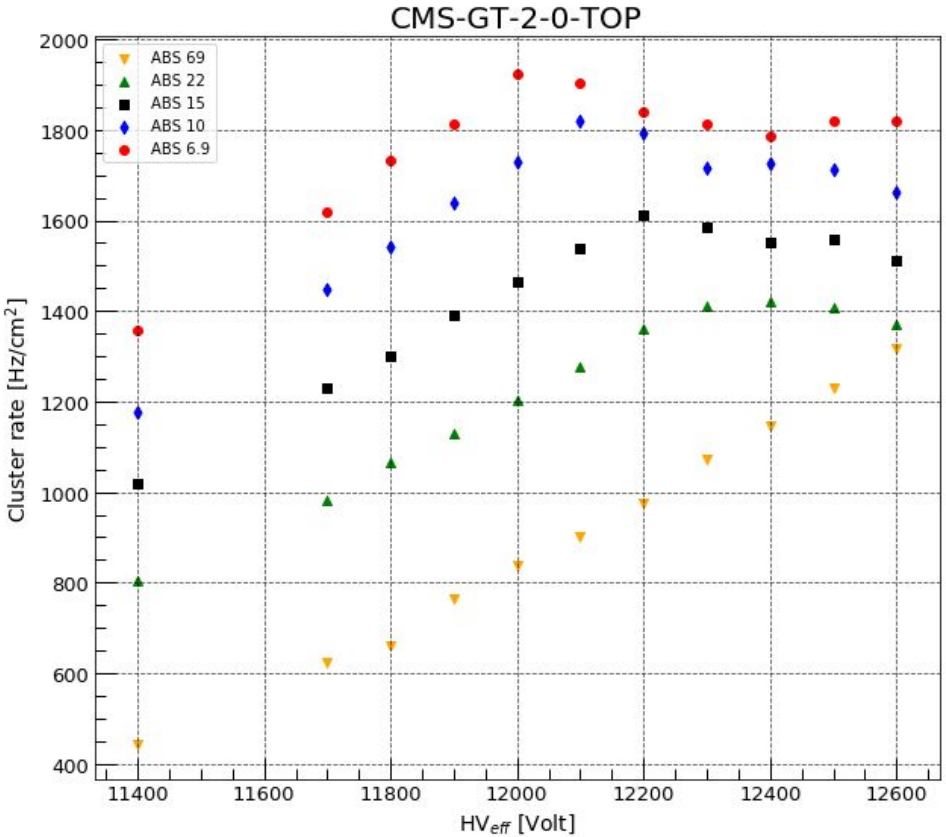


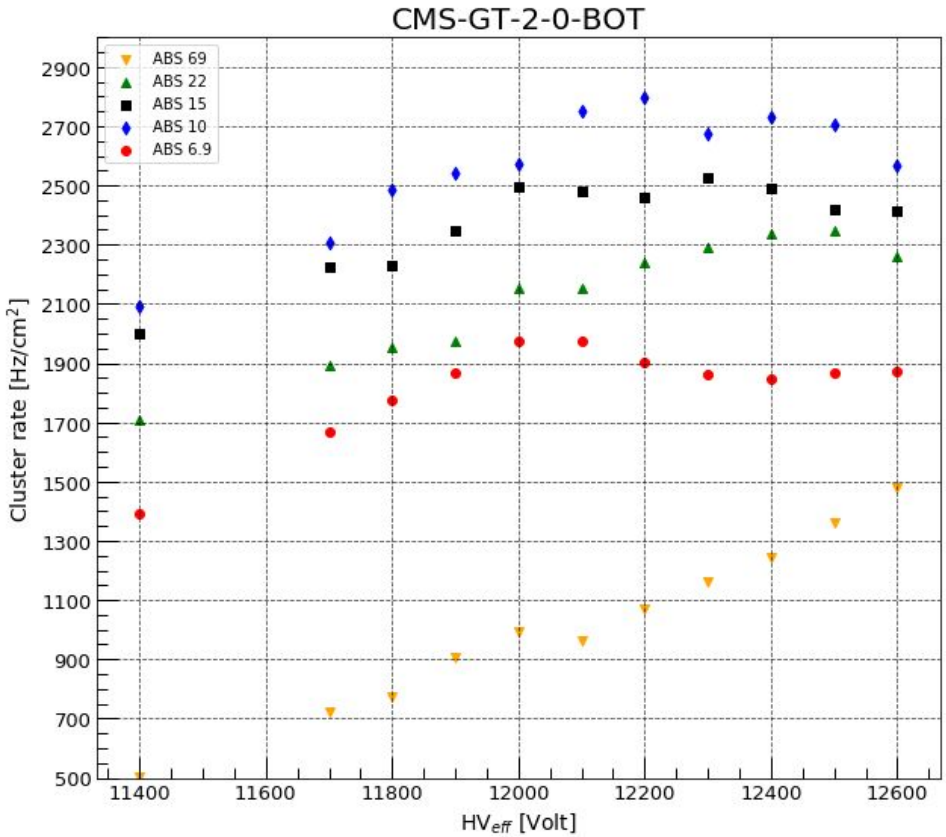
Current vs HV with ecogas mix-2@ different ABS



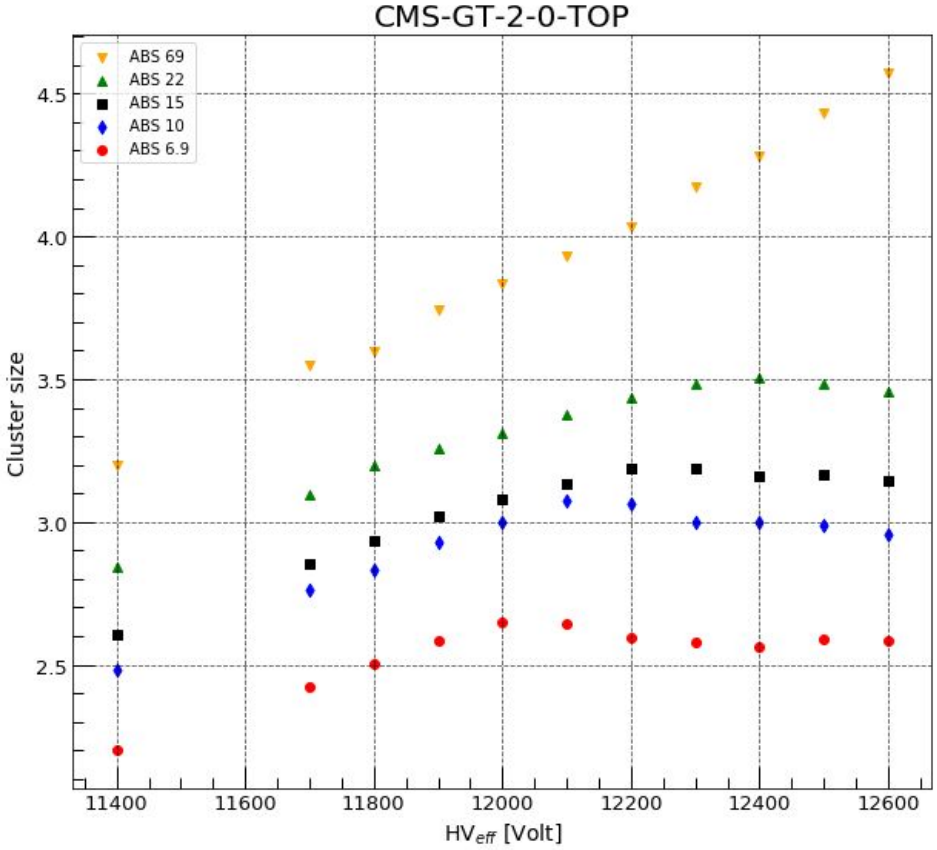


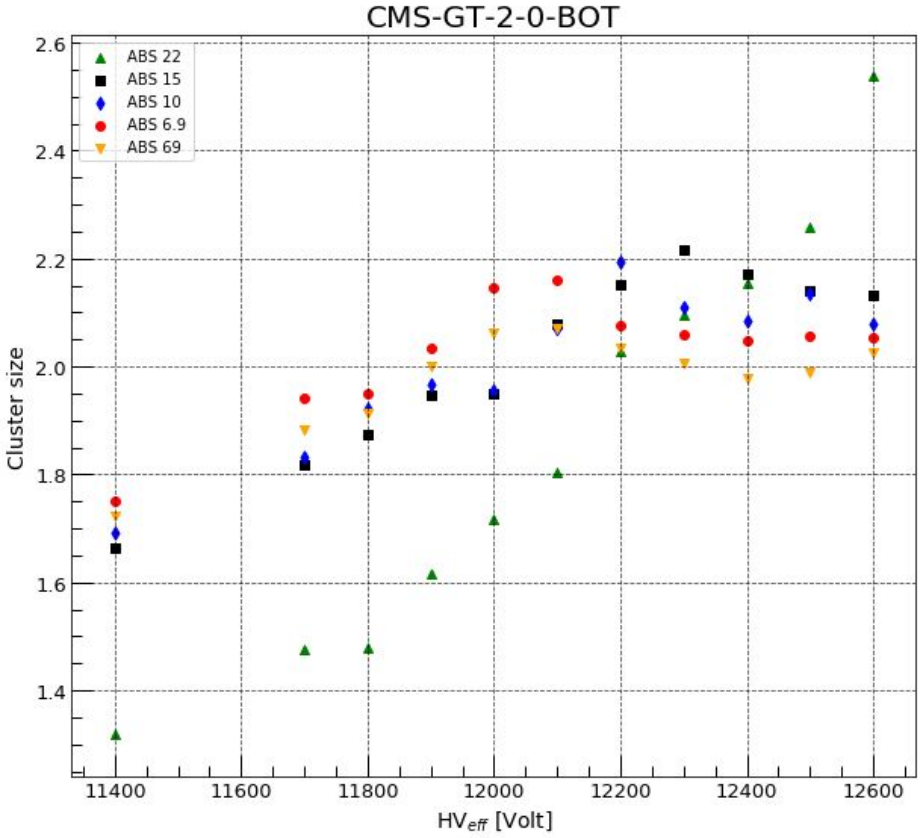
Cluster rate (strip mean noise rate) vs HV with ecogas mix-2@ different ABS



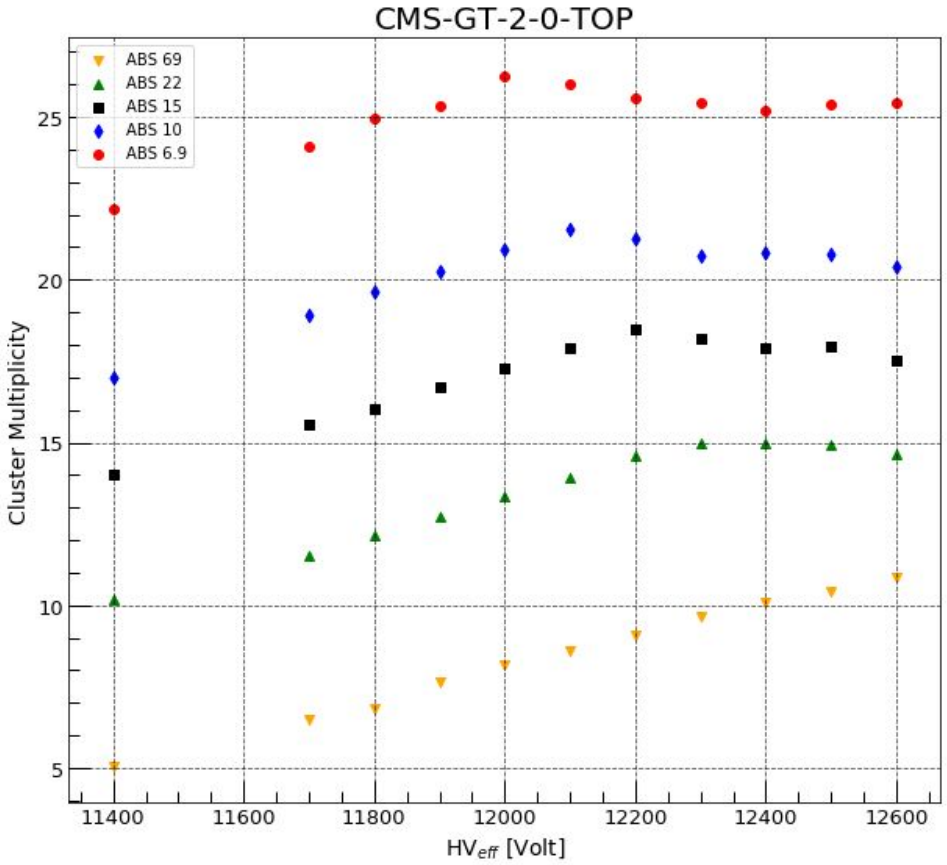


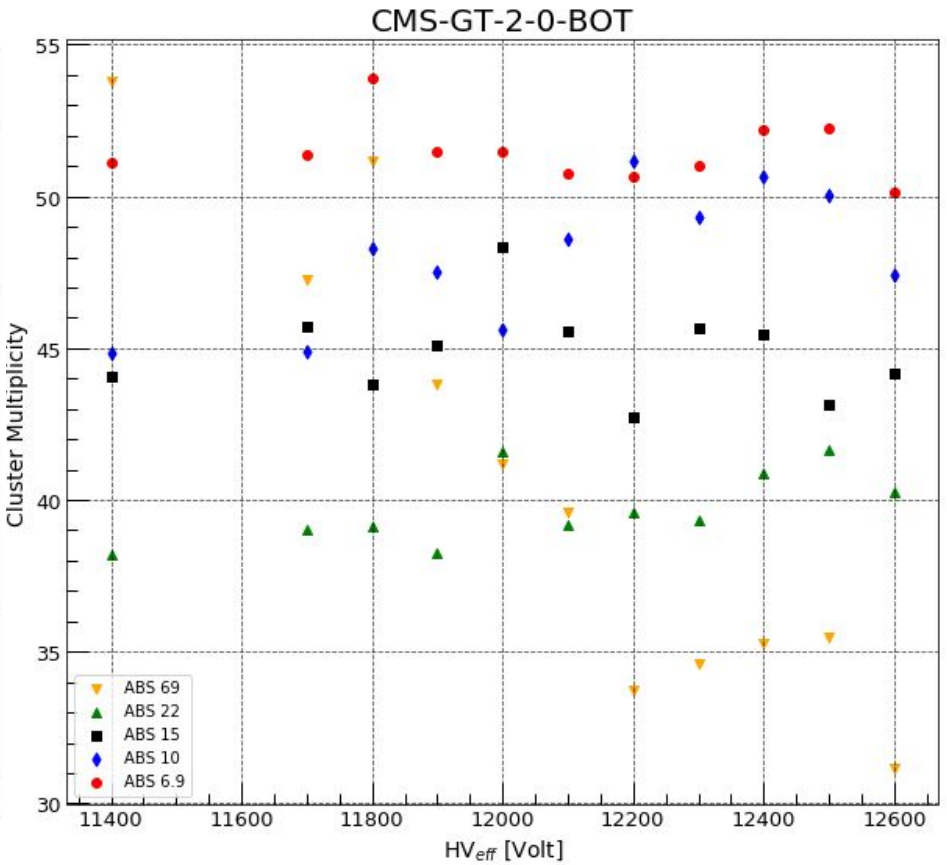
Cluster size vs HV with ecogas mix-2@ different ABS





Cluster multiplicity vs HV with ecogas mix-2@ different ABS





Summary

- Hit profile is not uniform in the case of bottom gap
- Current monitored is maximum at 12200V and after the HV point, trend is changing
- Cluster/noise rate is more in the case of the second gap
- Investigate the cluster multiplicity trend of the second gap

Thank you

GIF++ ECOGAS STUDIES

GAS MIX-1: HFO = 45%, CO2 = 50%, iC41H0 = 4%, SF6=1