

RPC Ecogas Study - Updates



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- ECOGAS1: 45% HFO, 50% CO₂, 4% iC₄H₁₀, 1% SF₆
Analysis: scans - 03 April 2019 to 30 October 2019
- ECOGAS2: 35% HFO, 60% CO₂, 4% iC₄H₁₀, 1% SF₆
Analysis: scans- 07 November 2019 to 11 March 2020
- The dark current monitored in all scans of the ecogas study is plotted (7 chambers)
- Data points corresponding to Ecogas1 and Ecogas2 is separated with a bold dotted line
- Atlas chamber was not tested with Ecogas2

Last meeting suggestions

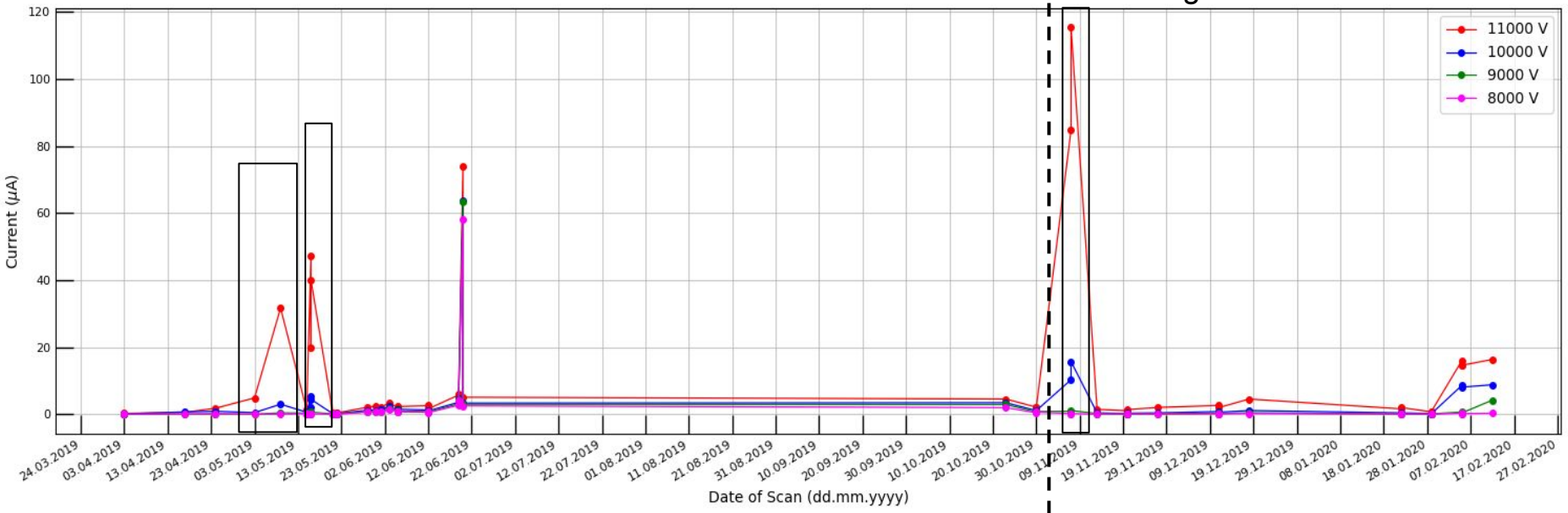
- Analysis considering the condition of source during the scan(ON/OFF)
- Add a low voltage point, 7000 V in the HV scan plots

Date	ABS
03/05/19	22, 6.9, 2.2
09/05/19	6.9, 22, 22
16/05/19	6.9, 46, 10
07/11/19	15, 6.9

Ecogas 1

EPDT-RPC-3

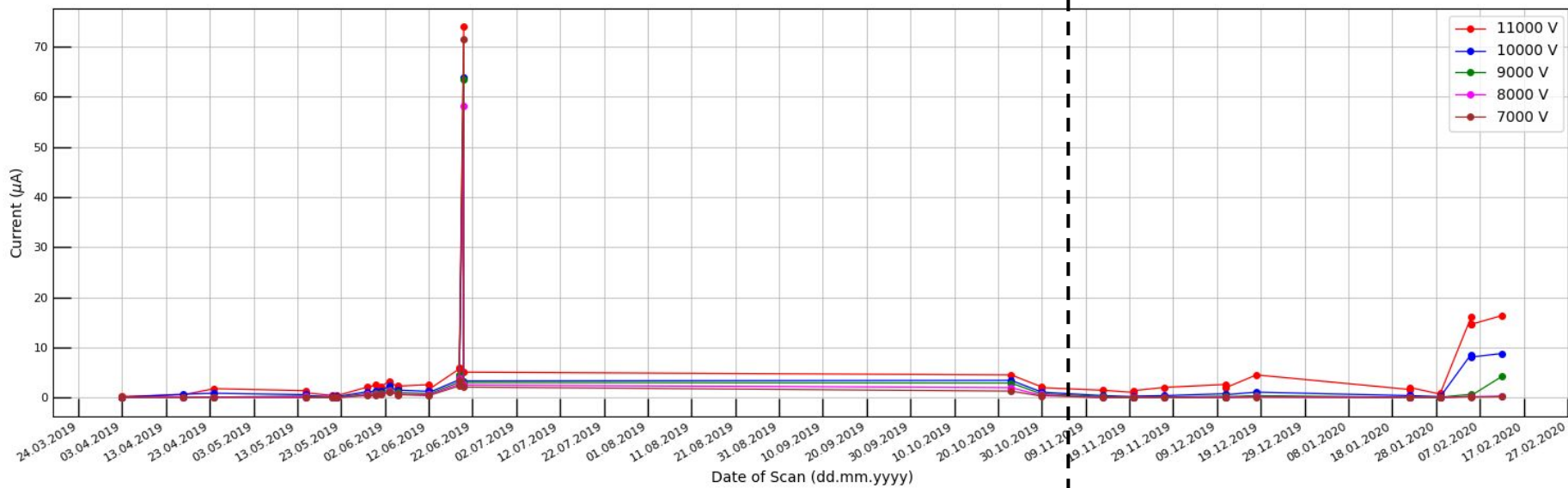
Ecogas 2

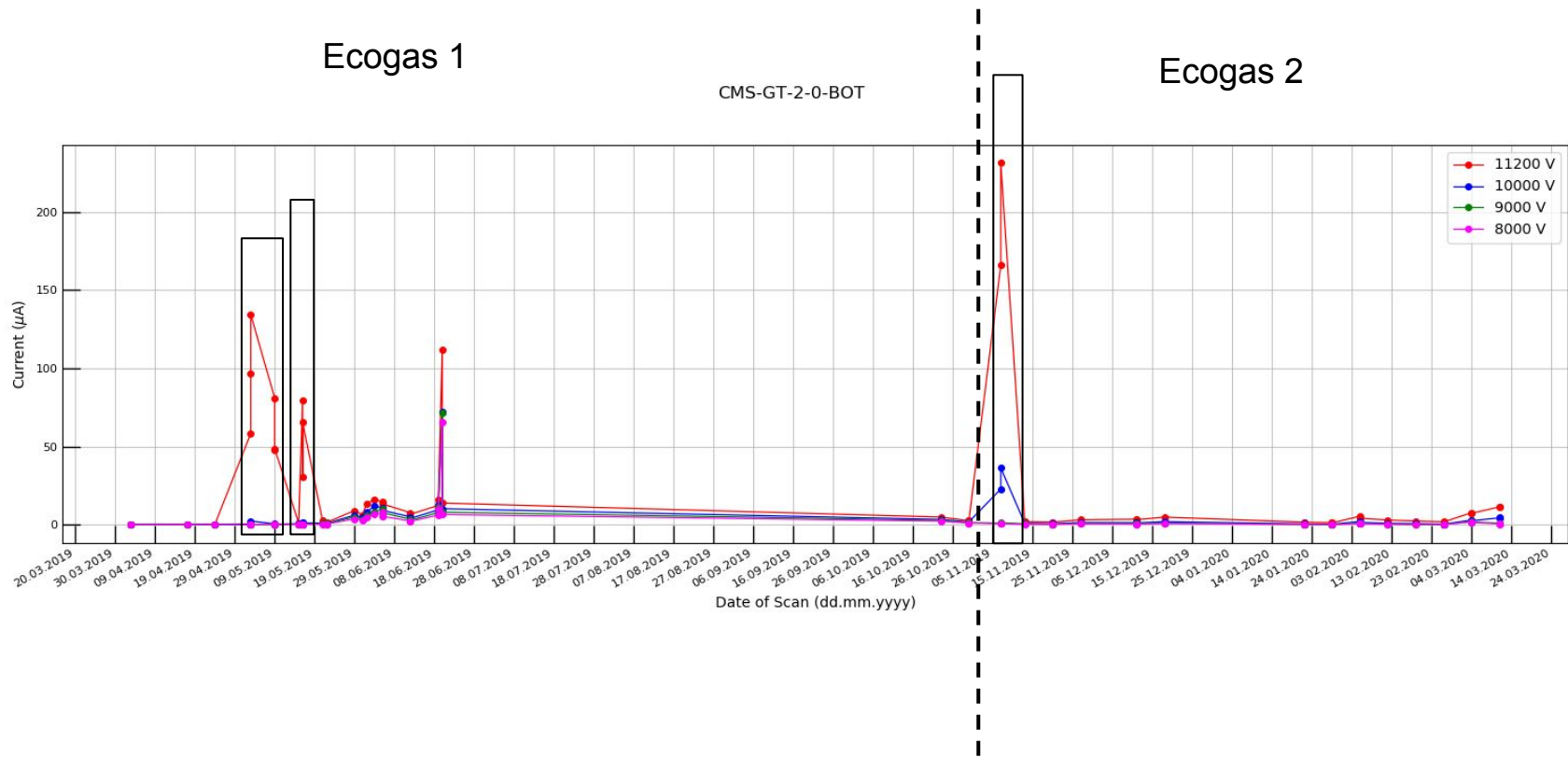


Ecogas 1

EPDT-RPC-3

Ecogas 2

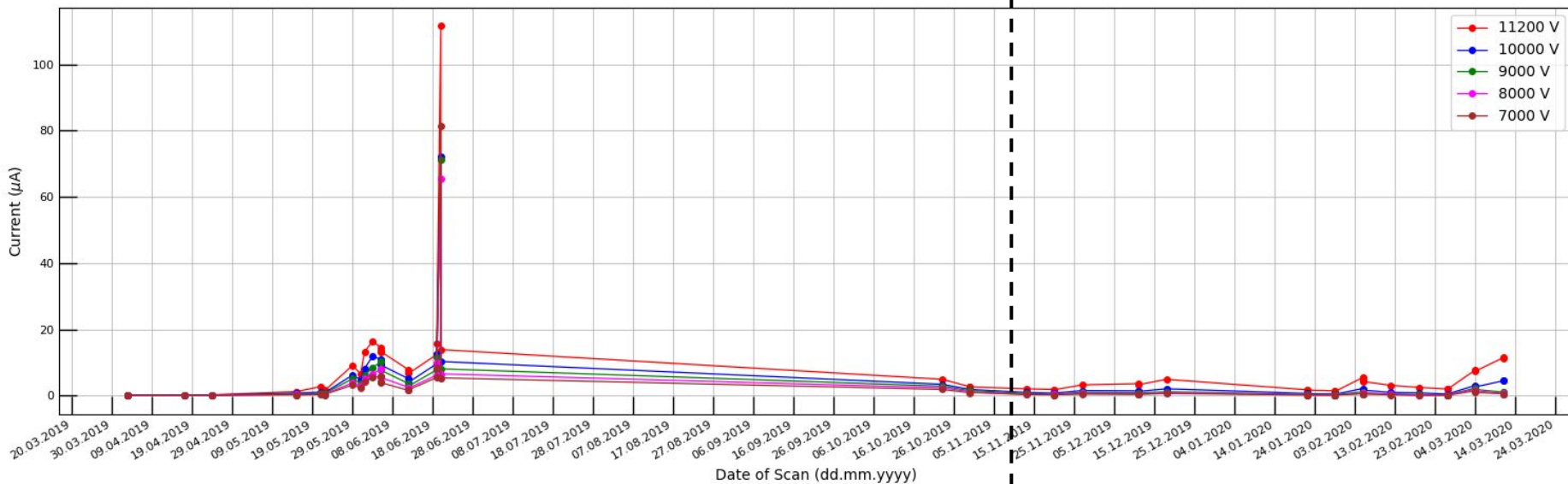


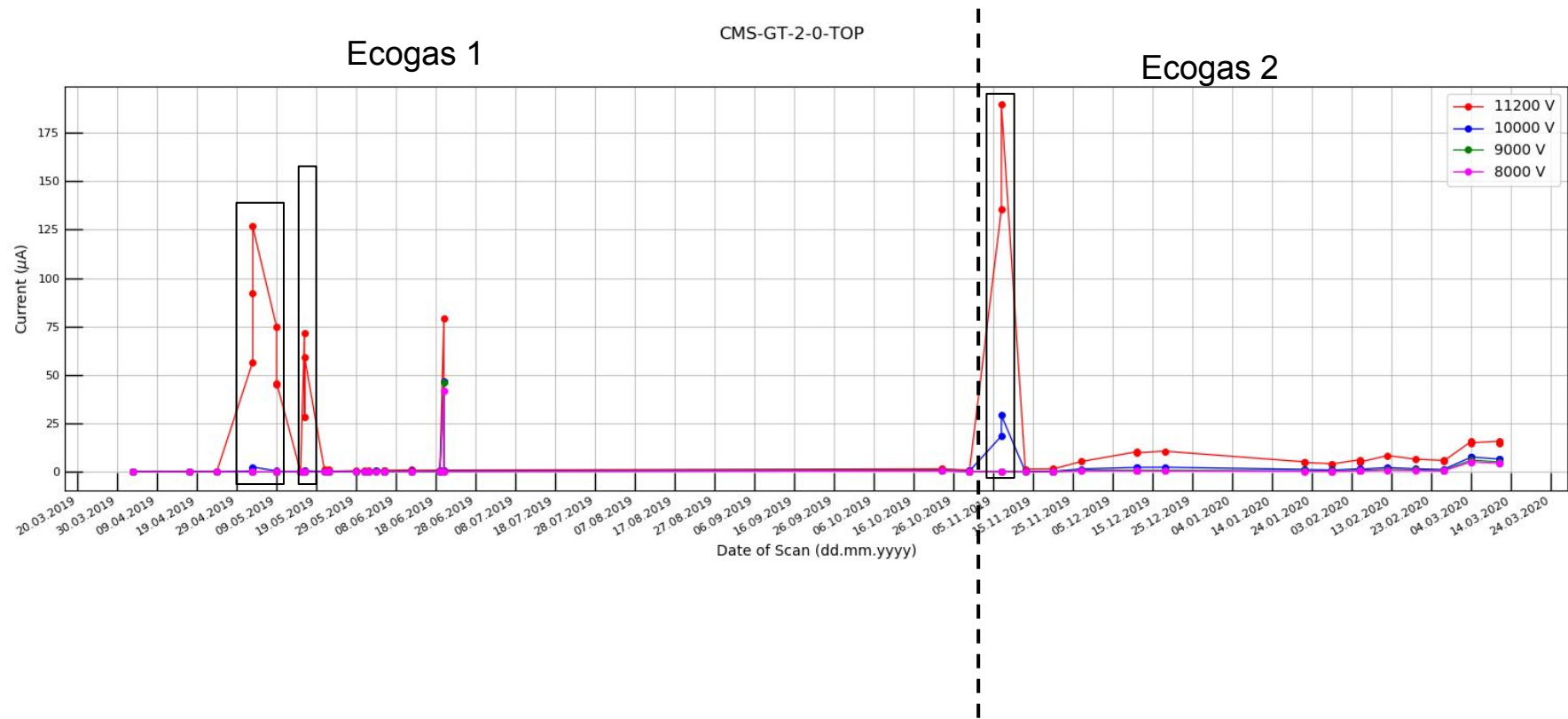


Ecogas 1

CMS-GT-2-0-BOT

Ecogas 2

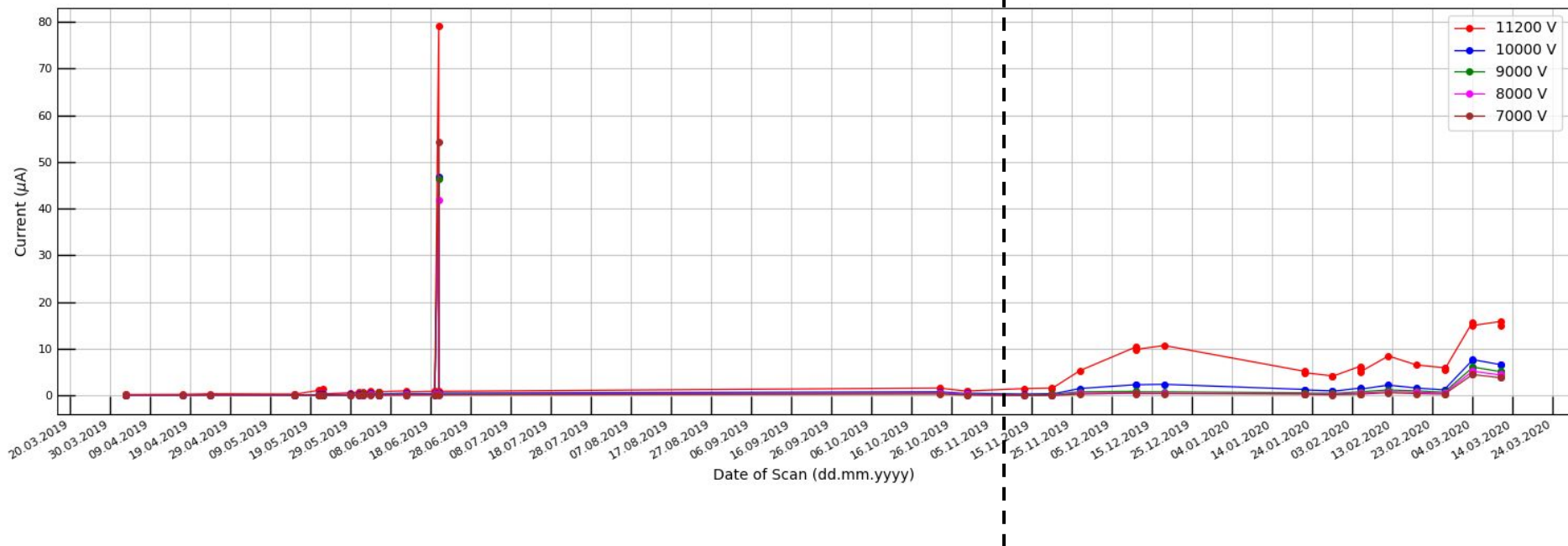




Ecogas 1

CMS-GT-2-0-TOP

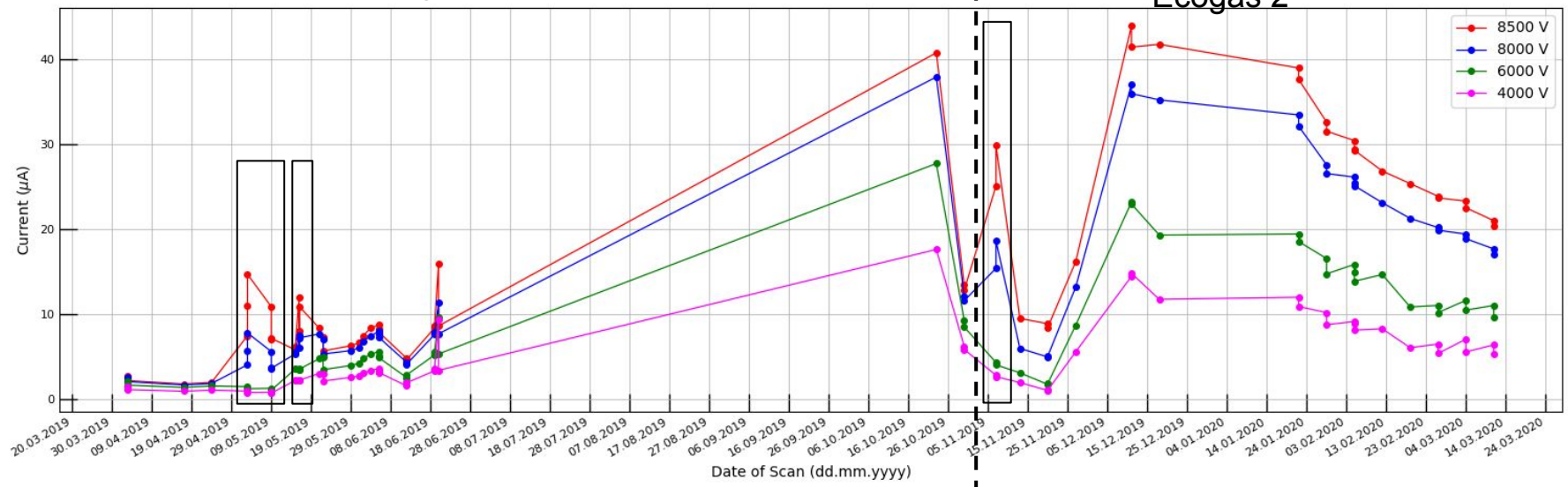
Ecogas 2



Ecogas 1

CMS-KODEL-1-4-BOT

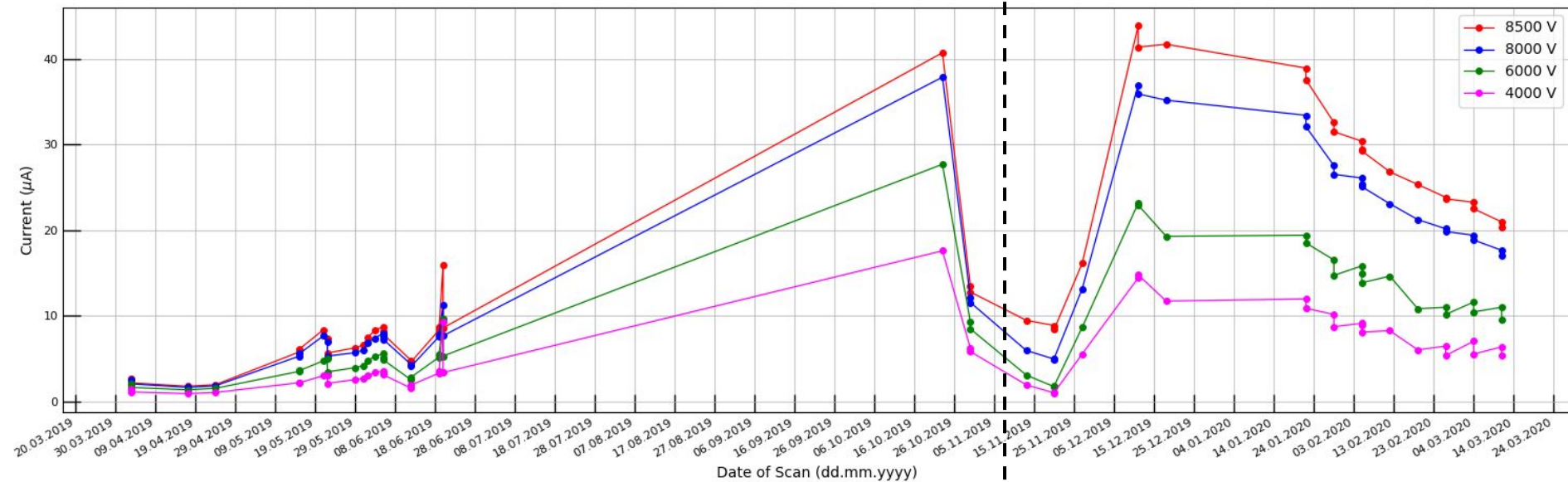
Ecogas 2

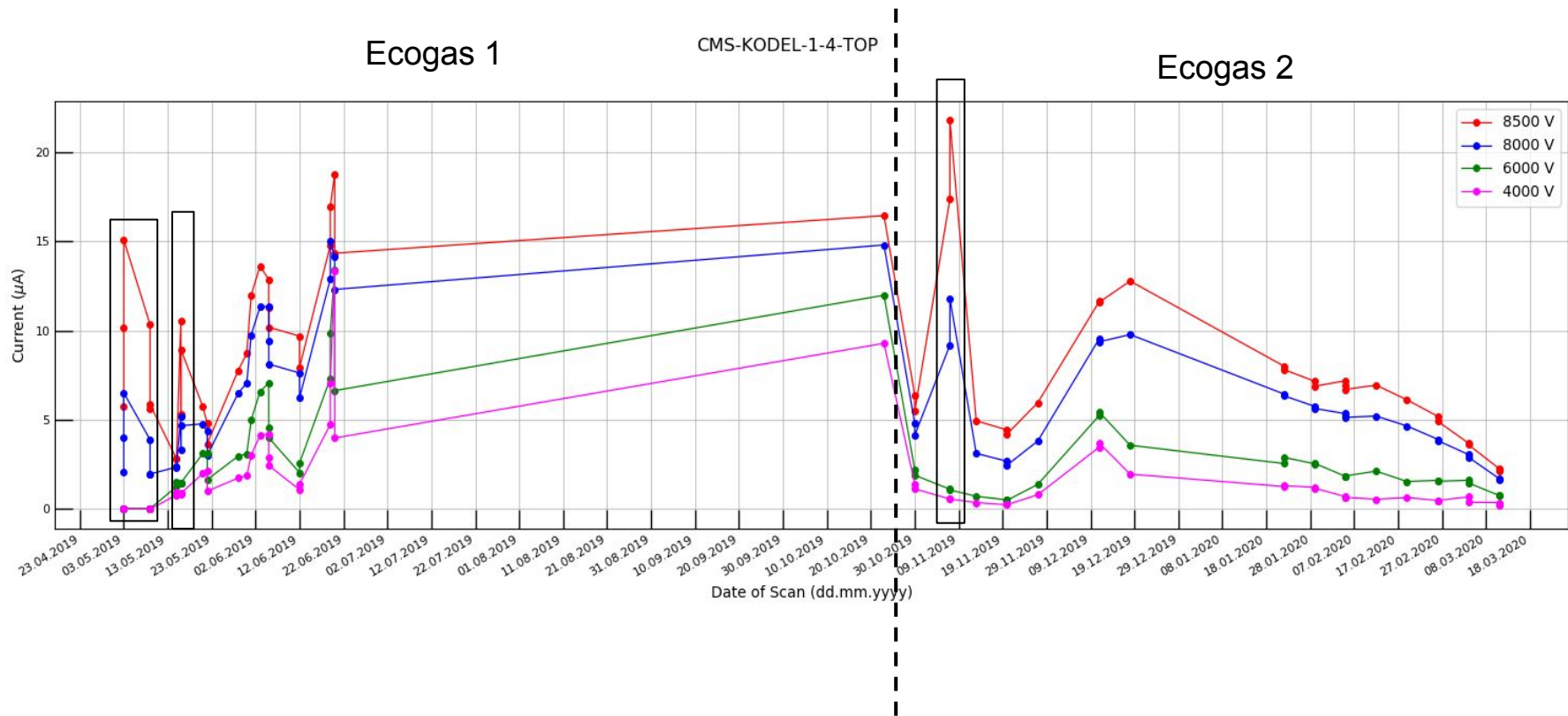


Ecogas 1

CMS-KODEL-1-4-BOT

Ecogas 2

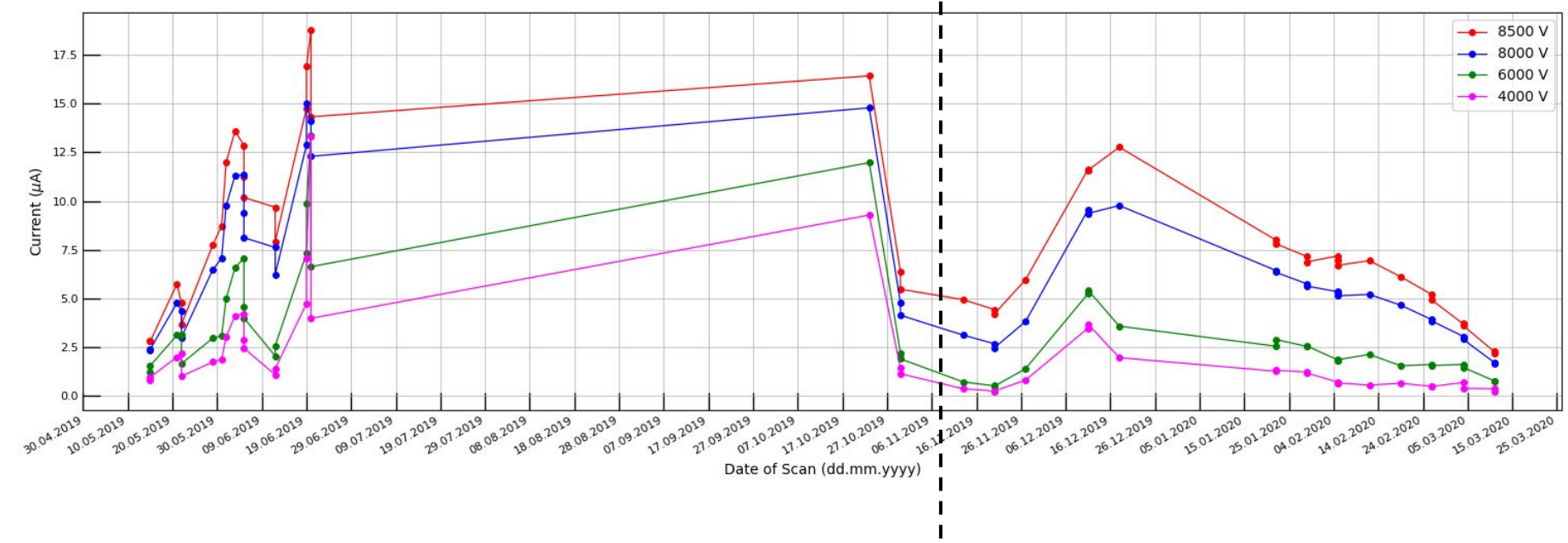


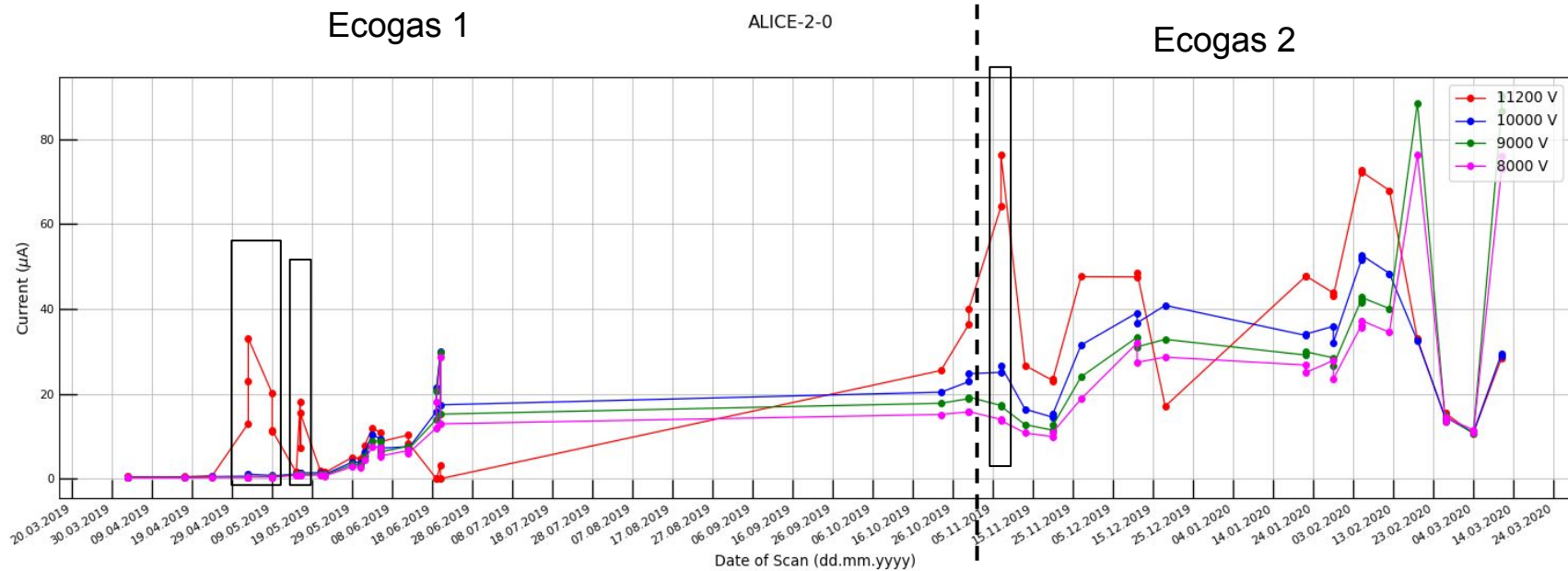


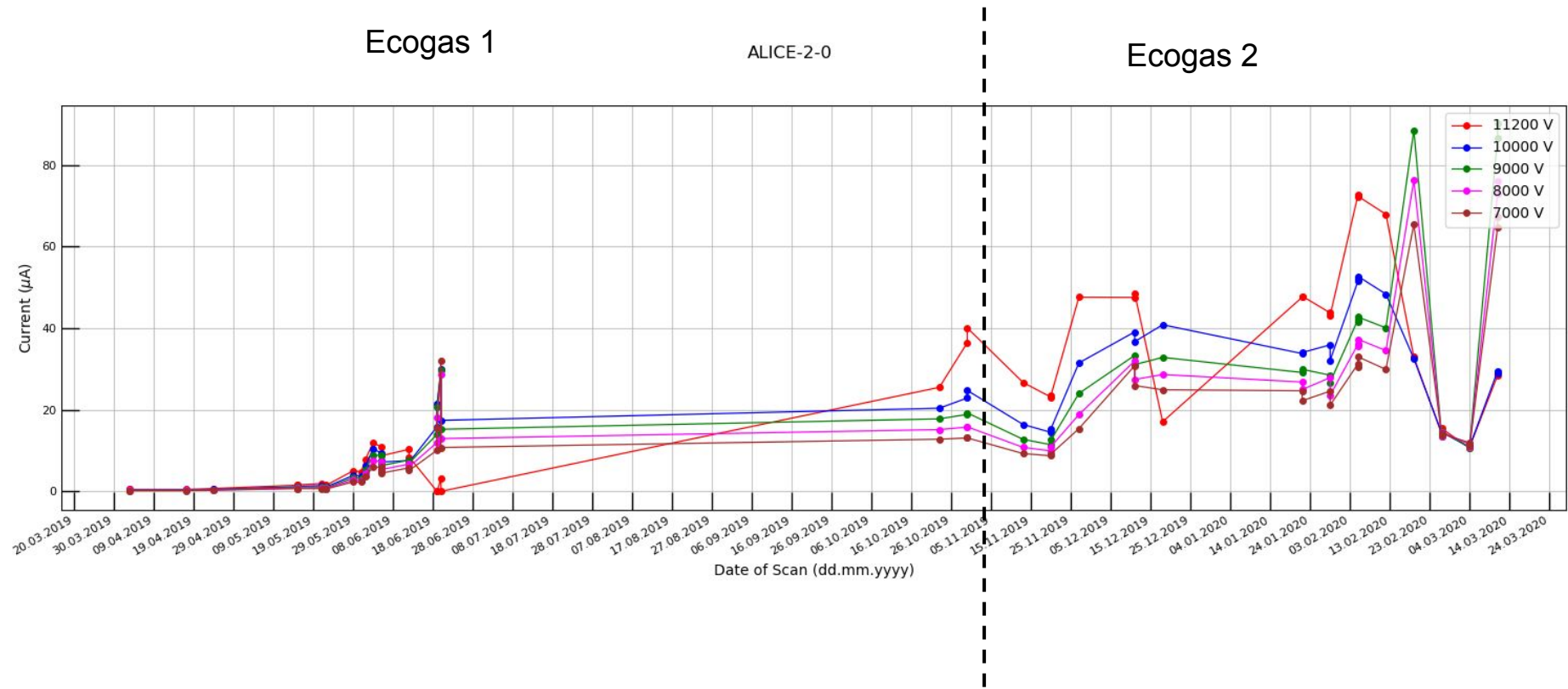
Ecogas 1

CMS-KODEL-1-4-TOP

Ecogas 2

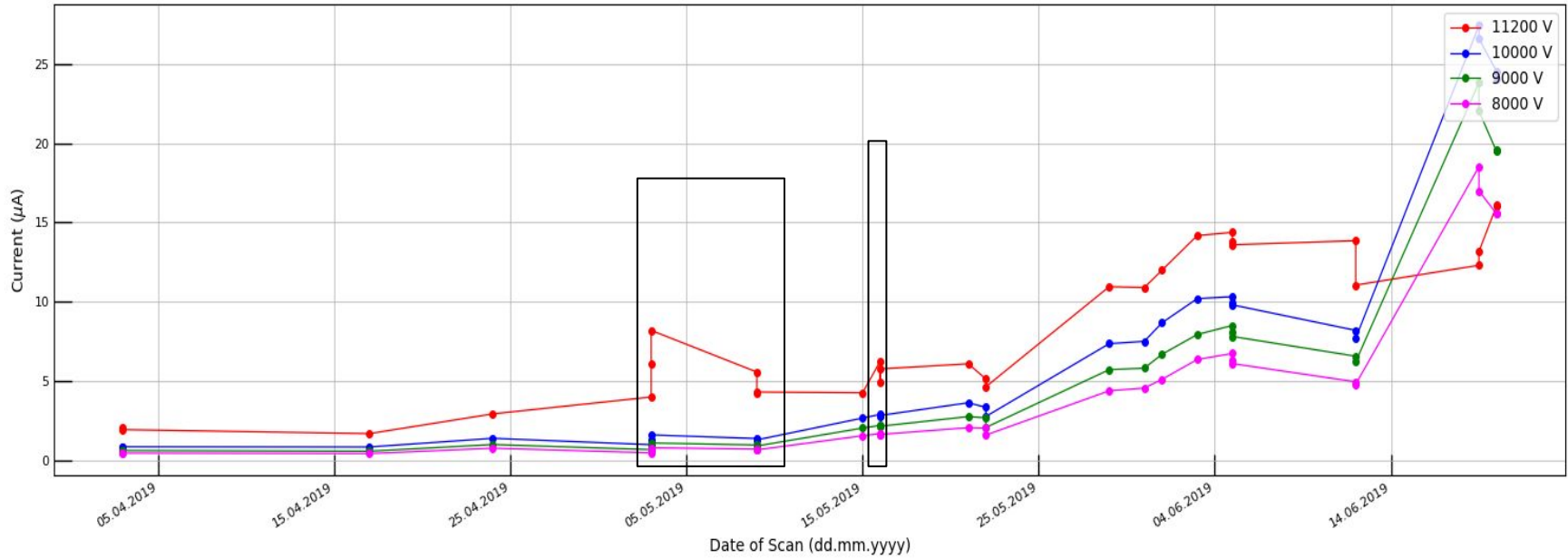






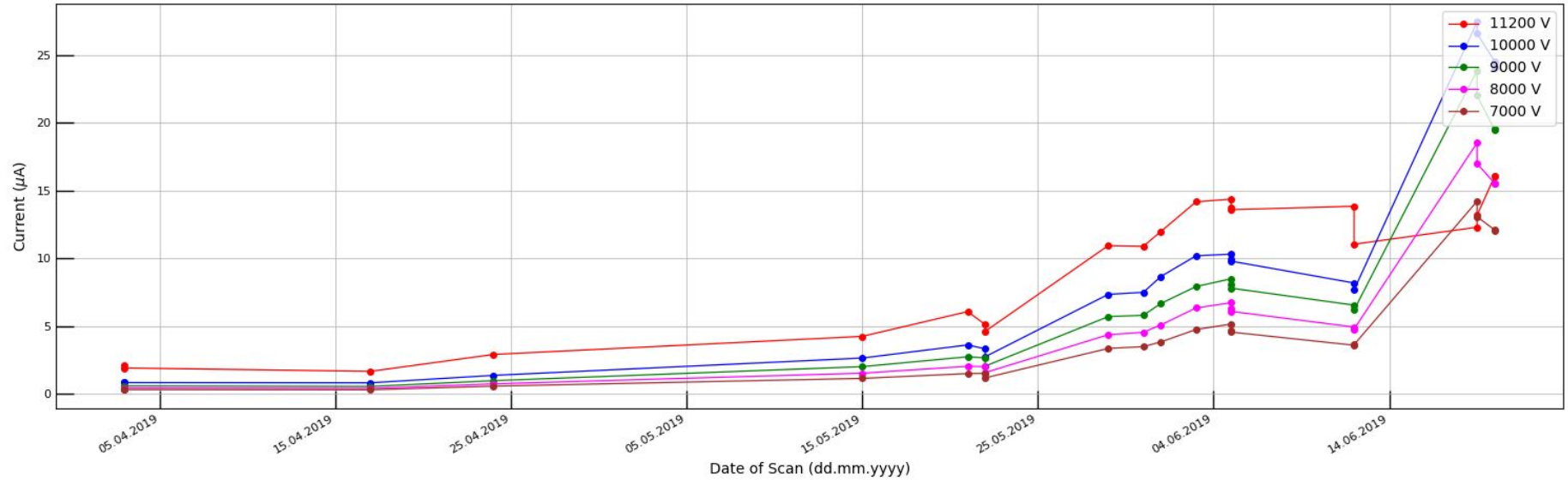
Ecogas 1

ATLAS-2-0



Ecogas 1

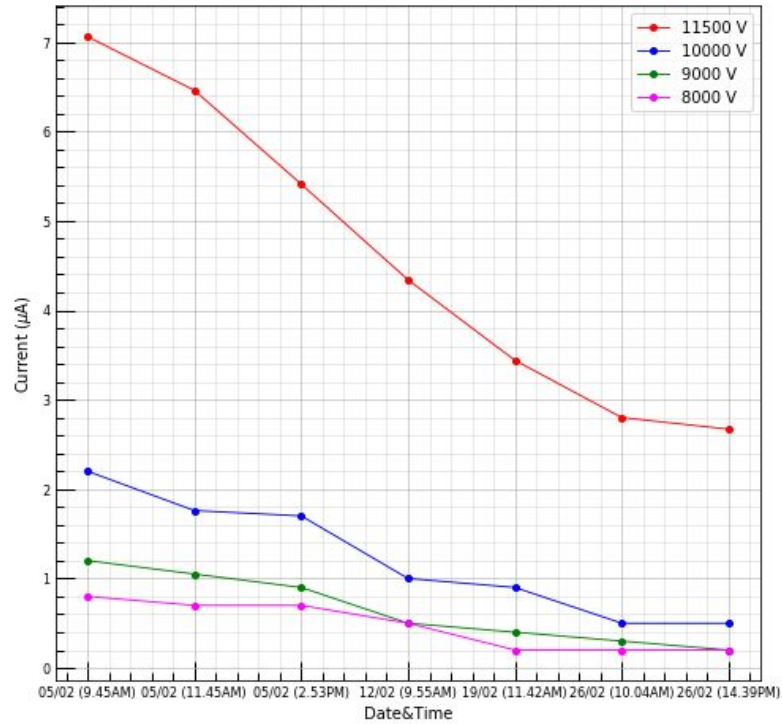
ATLAS-2-0



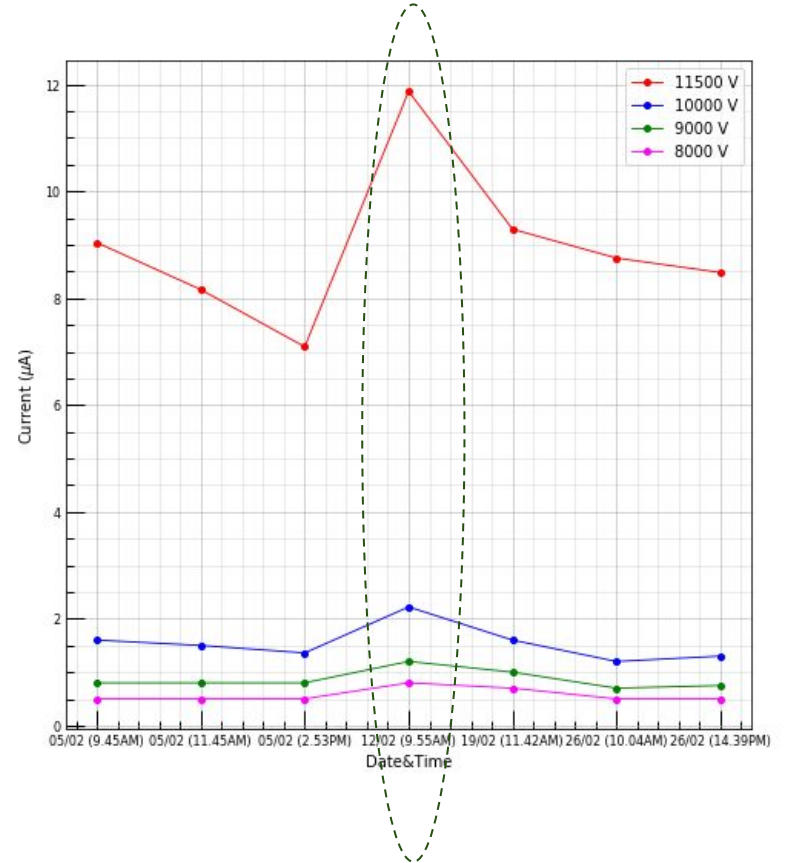
Backup slides

Dark current monitoring summary - February

CMS-GT-2-0-BOT

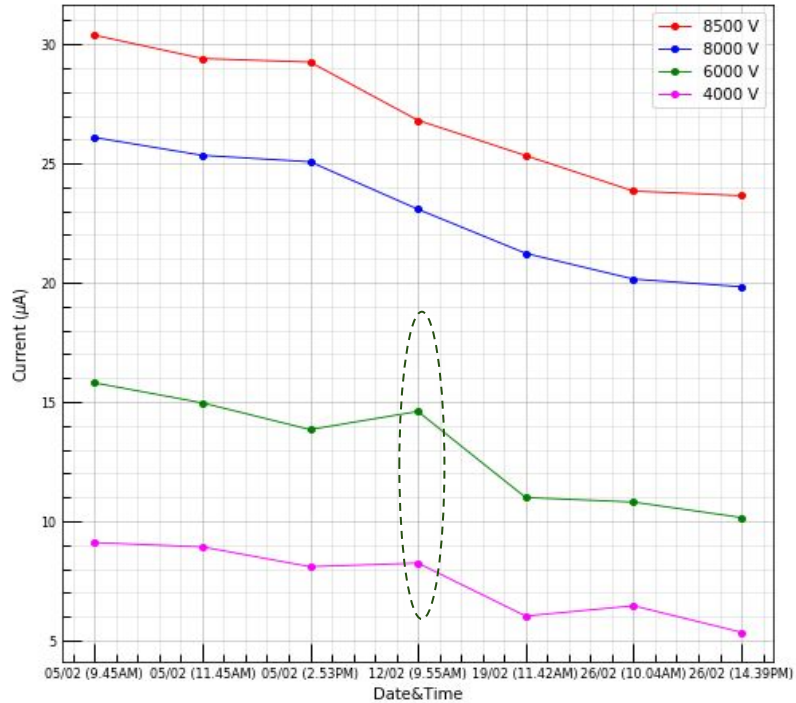


CMS-GT-2-0-TOP

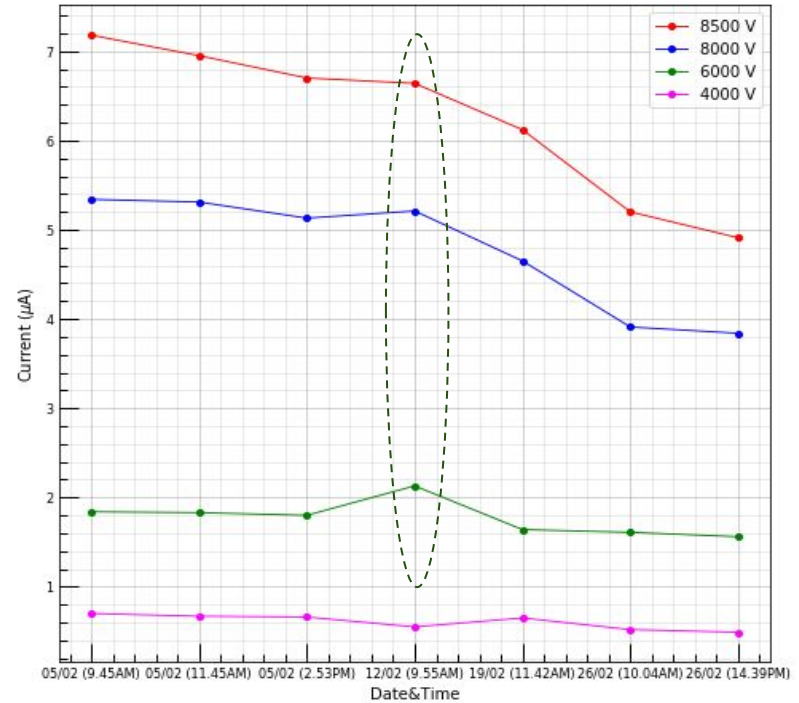


Dark current monitoring summary - February

CMS-KODEL-1-4-BOT

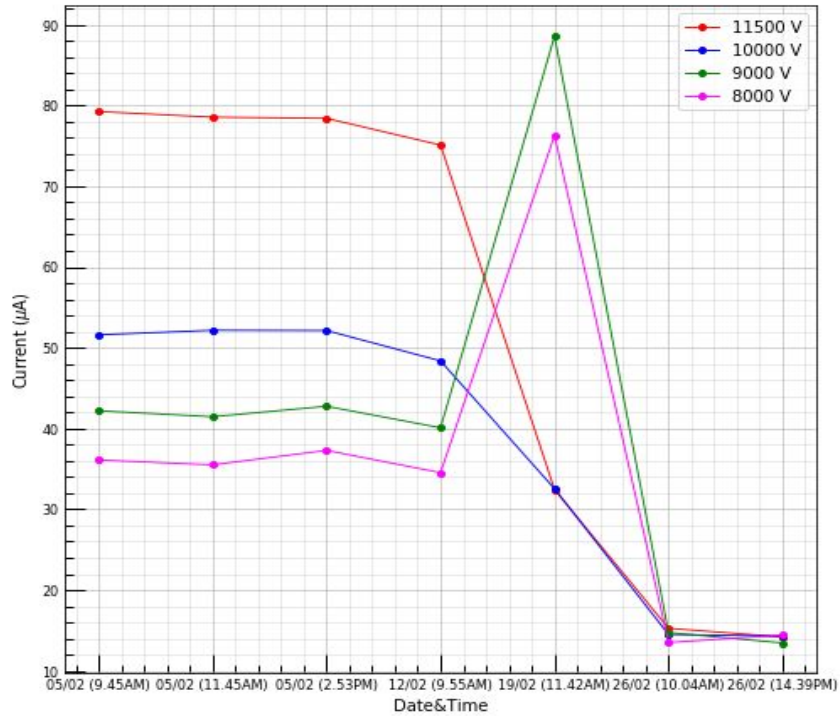


CMS-KODEL-1-4-TOP

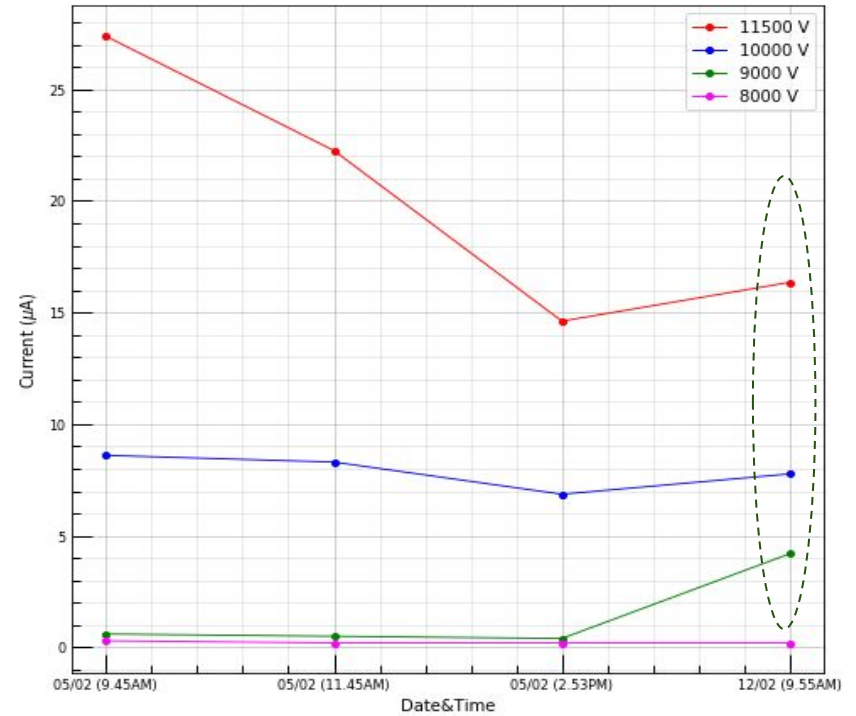


Dark current monitoring summary - February

ALICE-2-0

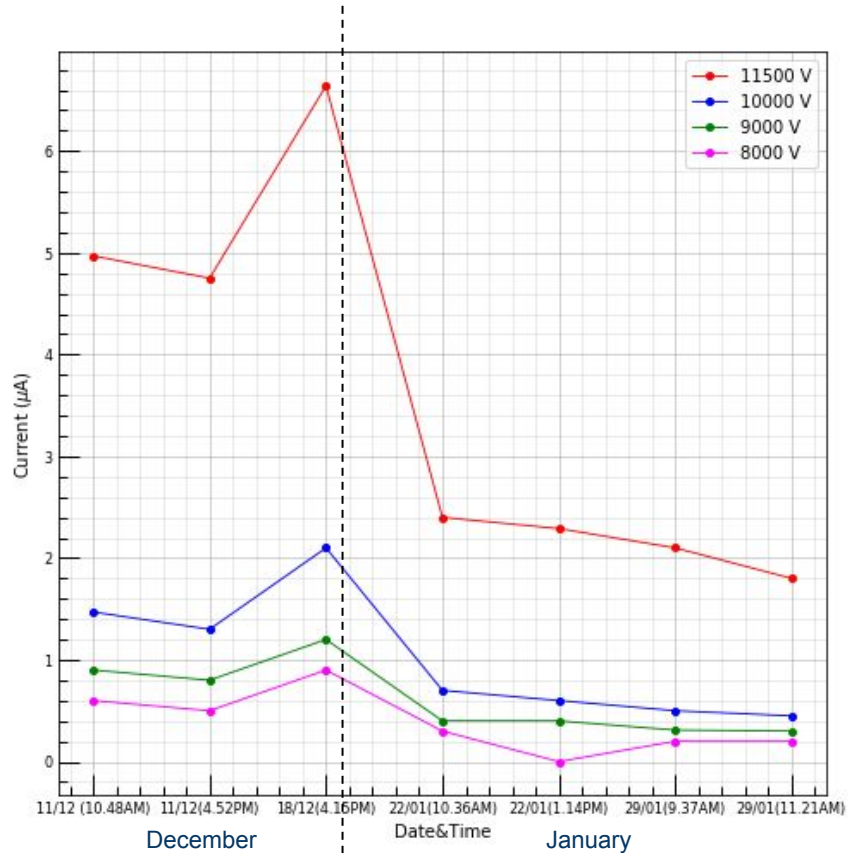


EPDT-RPC-3

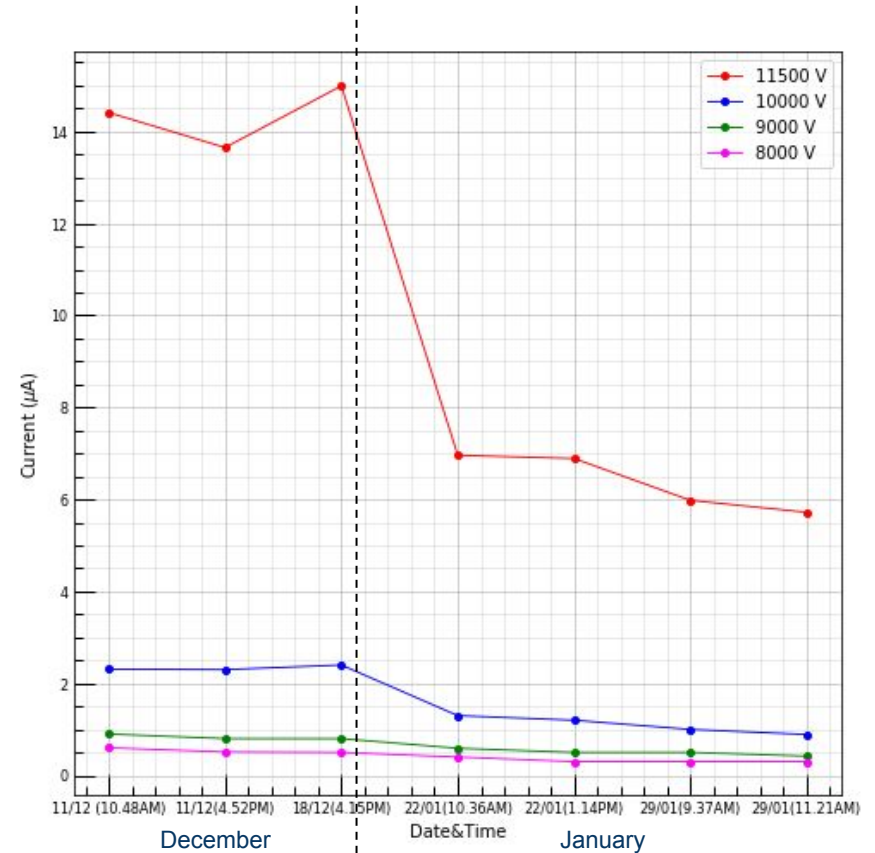


Dark current monitoring summary - December & January

CMS-GT-2-0-BOT

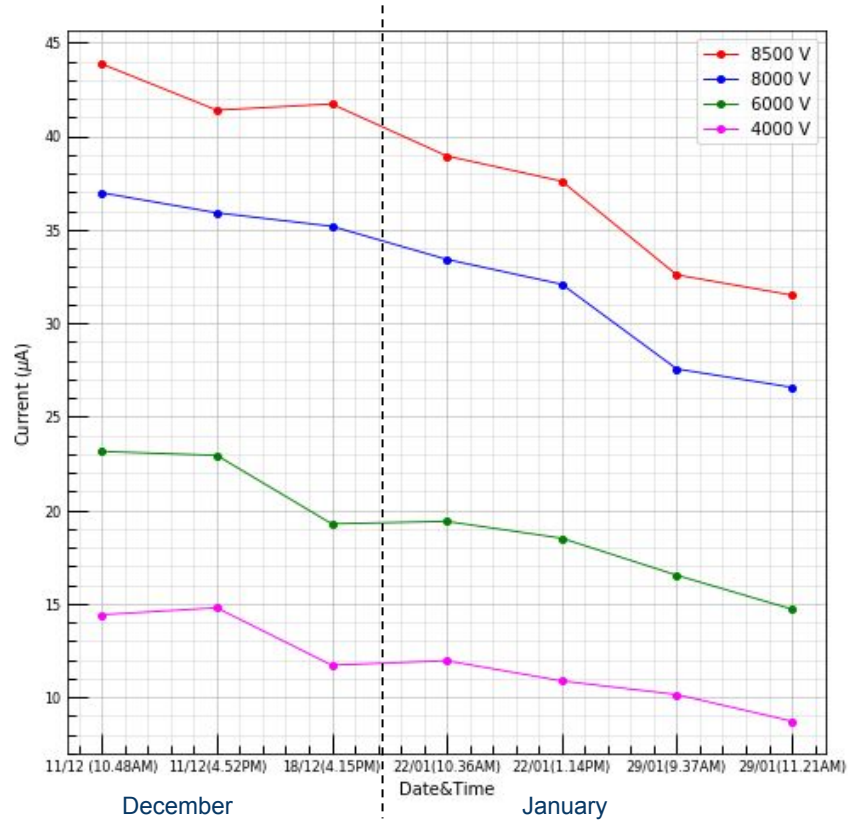


CMS-GT-2-0-TOP

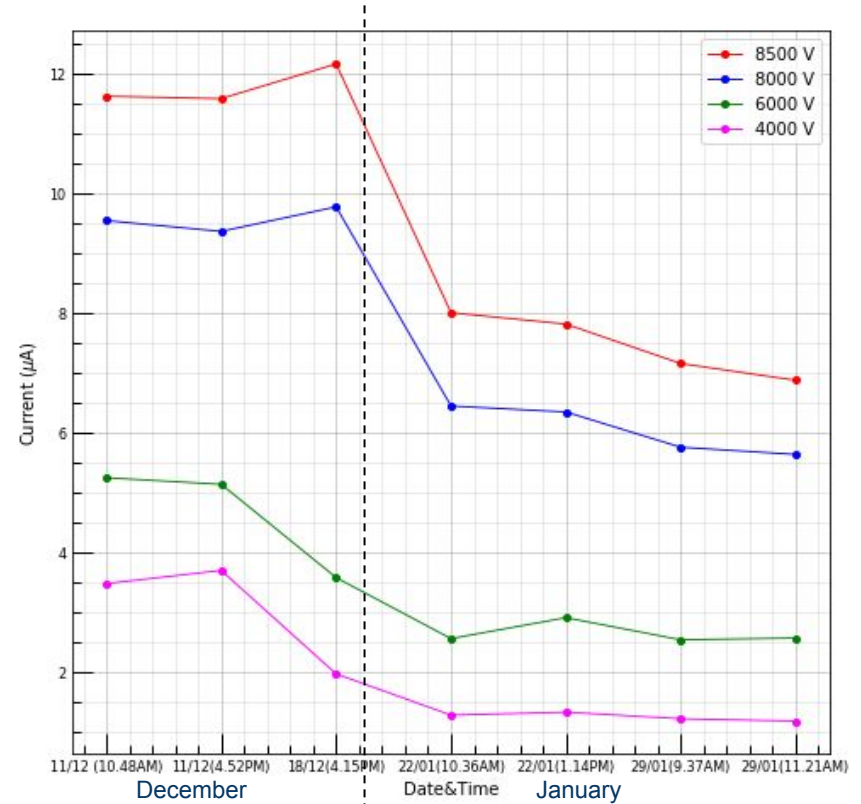


Dark current monitoring summary - December & January

CMS-KODEL-1-4-BOT

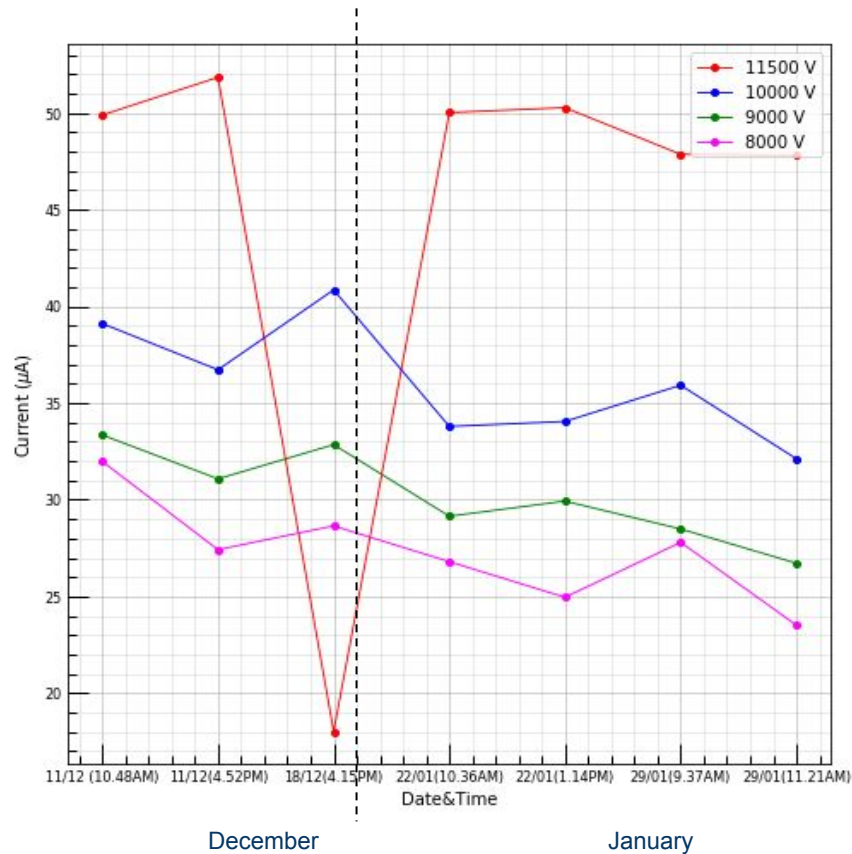


CMS-KODEL-1-4-TOP

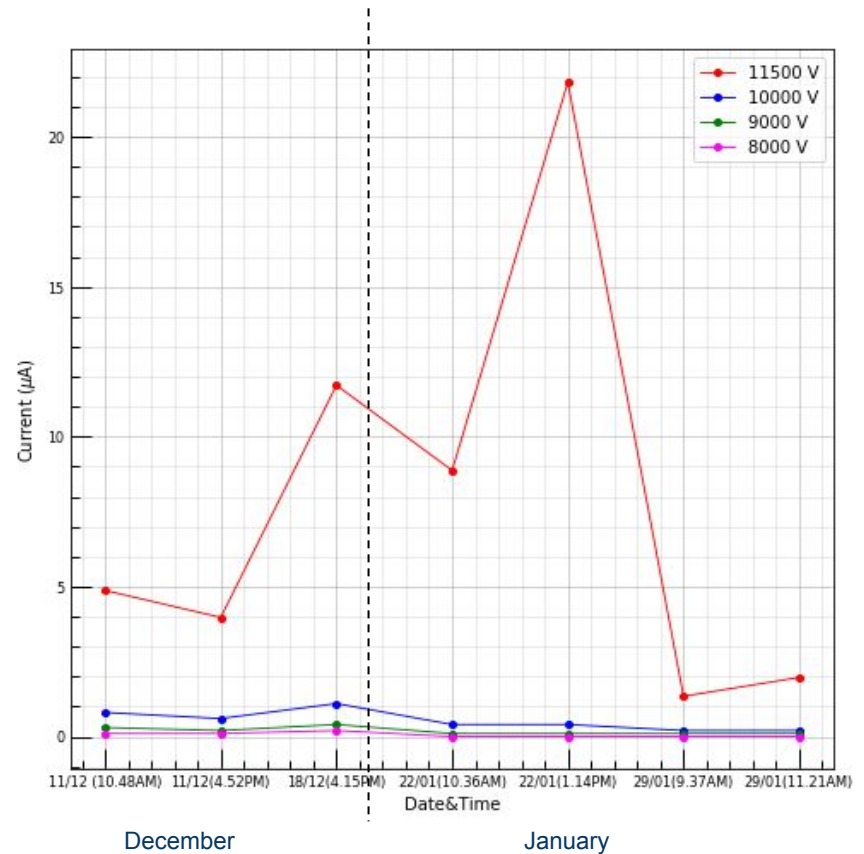


Dark current monitoring summary - December & January

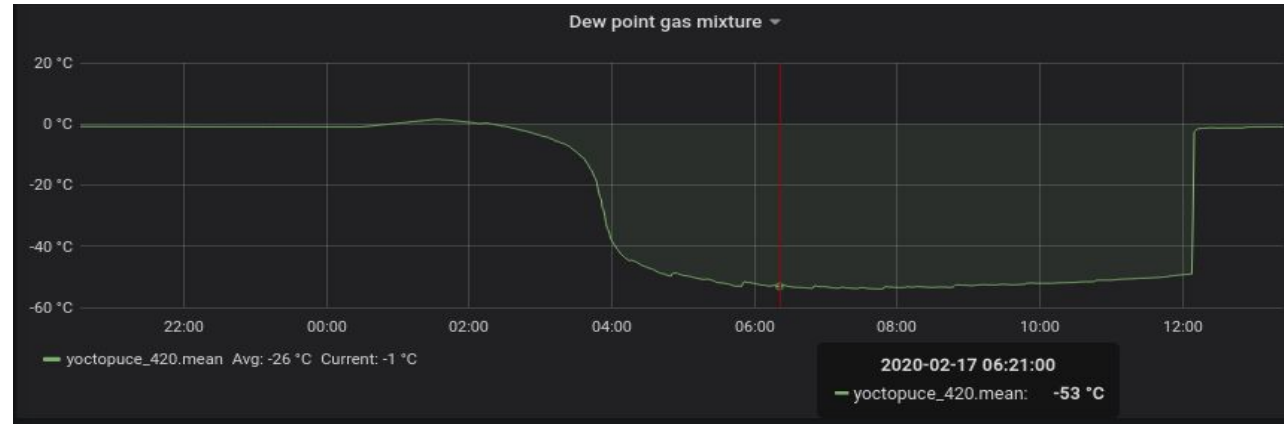
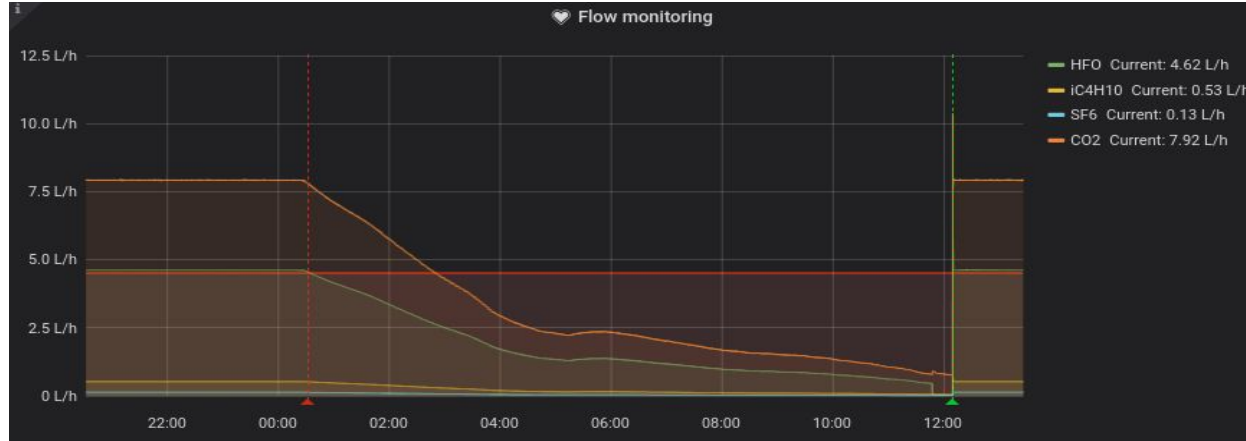
ALICE-2-0



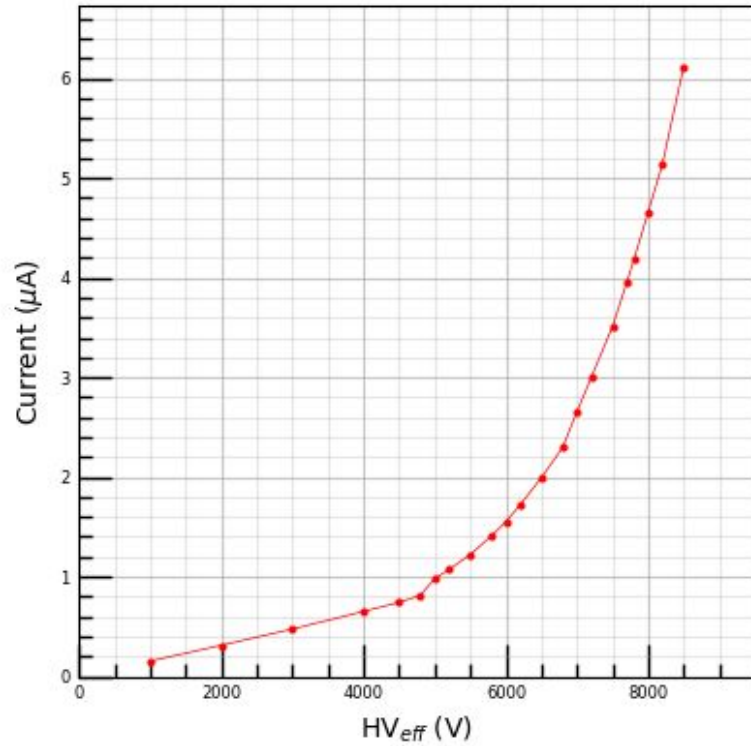
EPDT-RPC-3



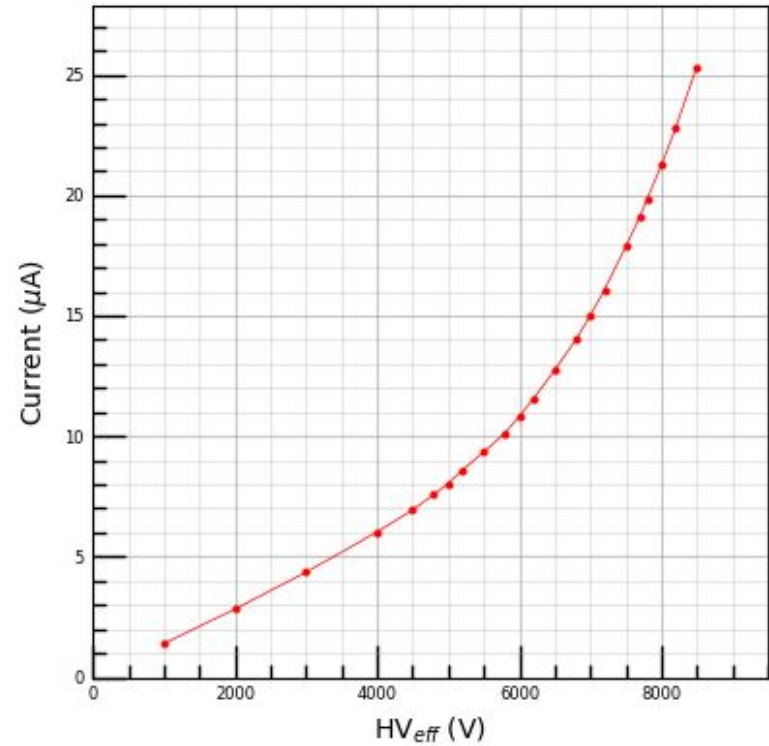
Variation in gas flow and dew point due to insufficient CO₂ supply (17/02/2020)



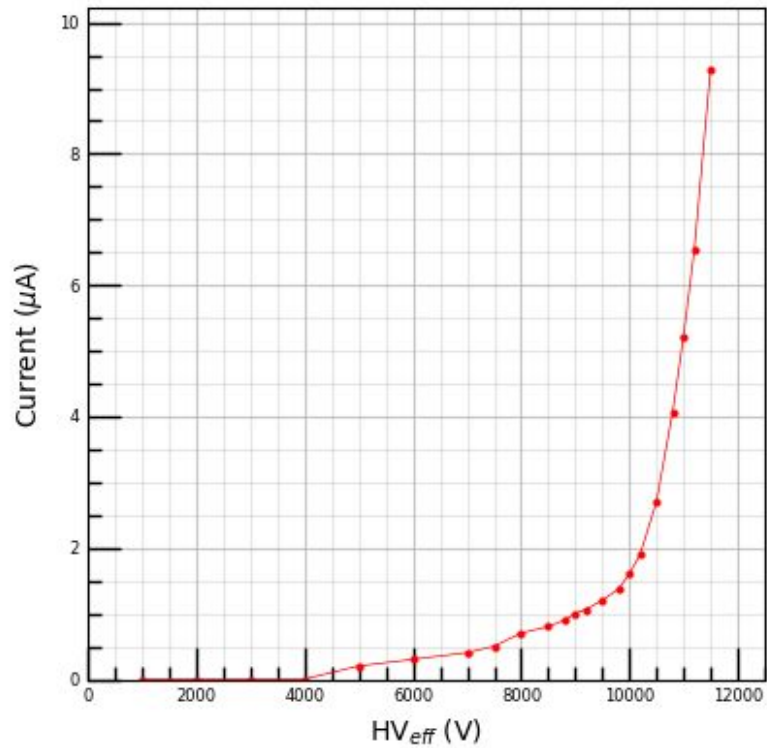
CMS-KODEL_1-4-TOP



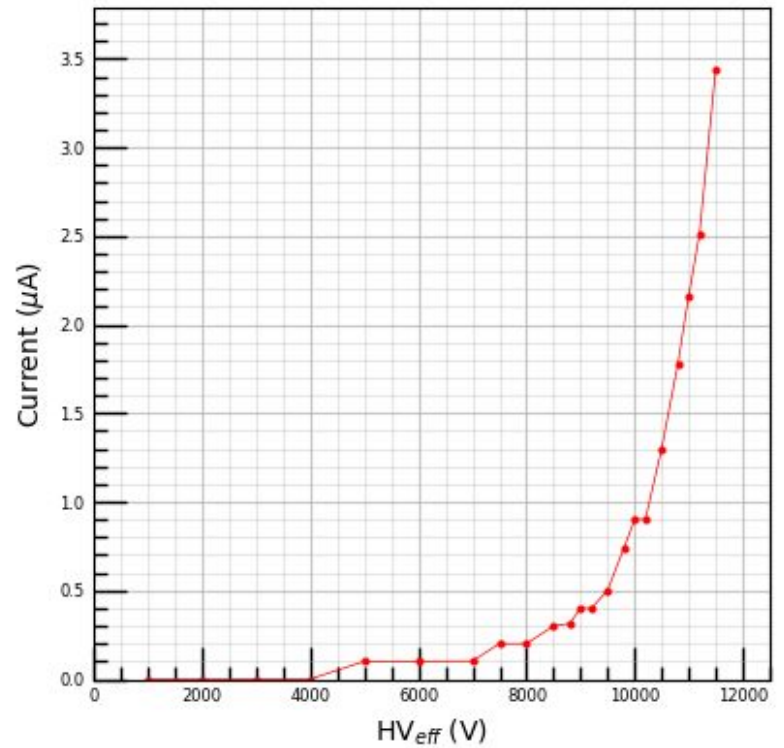
CMS-KODEL_1-4-BOT



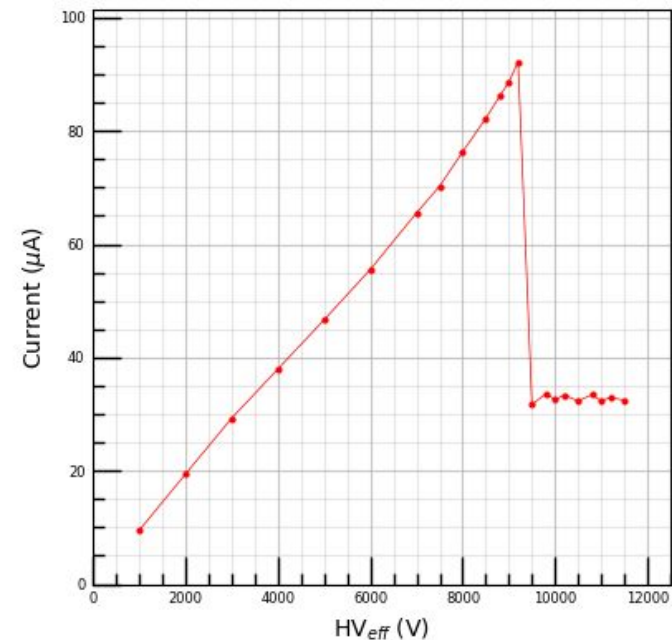
CMS-GT-2-0-TOP



CMS-GT-2-0-BOT



ALICE-2-0



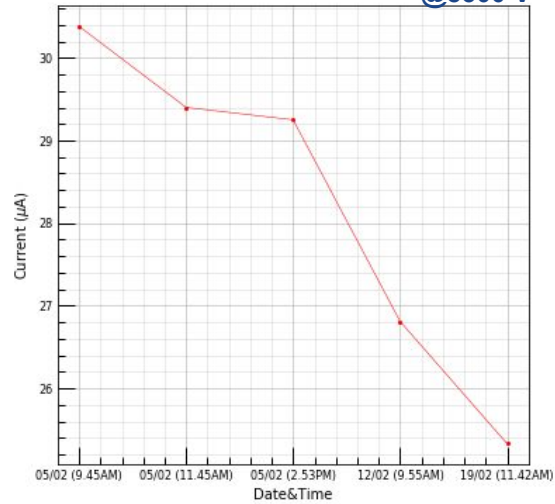
Chamber/Gap	Dark current (µA) (@final HV point)
CMS-GT-2-0-BOT	3.44
CMS-GT-2-0-TOP	9.29
CMS-KODEL-1-4-BOT	25.33
CMS-KODEL-1-4-TOP	6.12
ALICE-2-0	32.44

- Chamber EPDT3 was removed on wednesday

Dark current monitoring-summary (February)

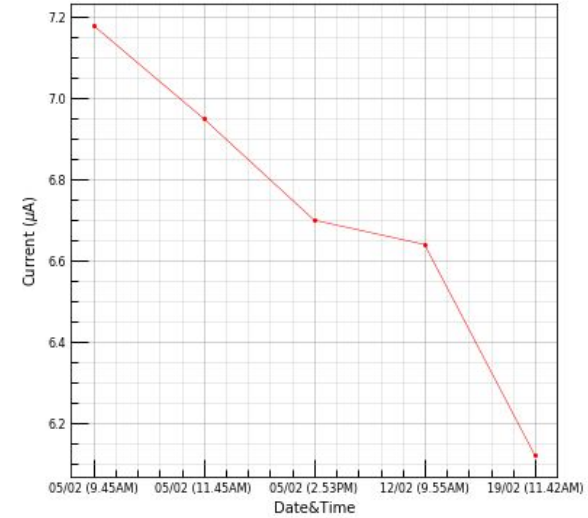
CMS-KODEL-1-4-BOT

@8500 V



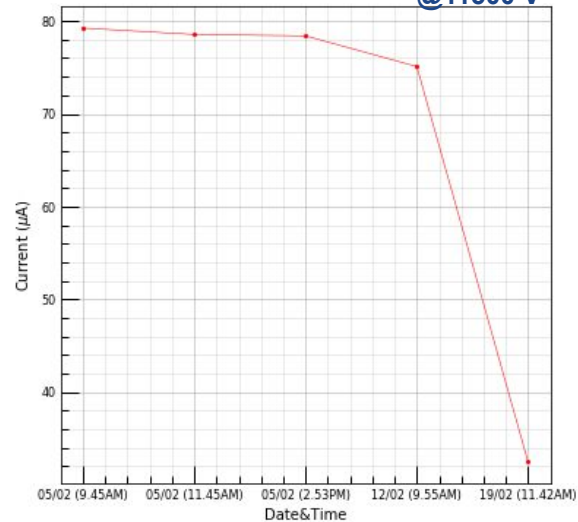
CMS-KODEL-1-4-TOP

@8500 V



ALICE-2-0

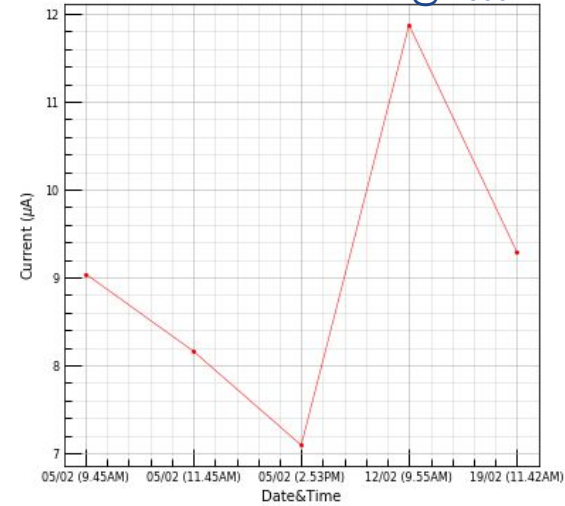
@11500 V



Dark current monitoring-summary (February)

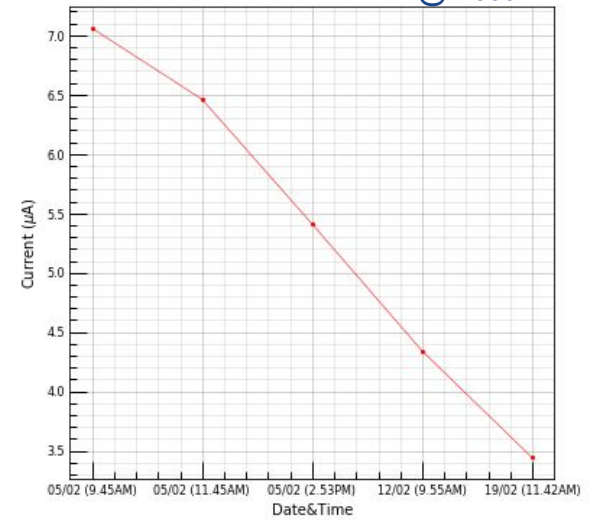
CMS-GT-2-0-TOP

@11500 V



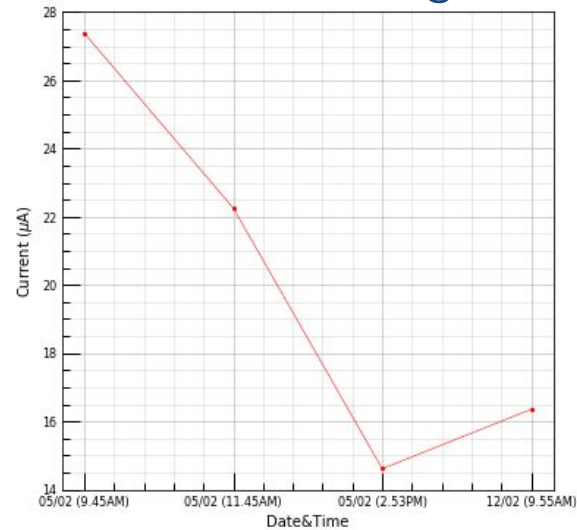
CMS-GT-2-0-BOT

@11500 V



EPDT-RPC-3

@11500 V



Summary

- Total gas flow and dew point decreased due insufficient supply of CO₂
- Dark current monitored during HV scan (19/02/2020) is pretty high for CMS-KODEL_1-4-BOT (25.33 μA) gap and ALICE chamber (32.44 μA)
- Removed chamber EPDT3 on wednesday
- CMS-GT_2-0 gap is showing unexpected behaviour in terms of dark current
- New HV scan started today @10.04AM