

Weekly Shift

March 3 to March 10

D. Piccolo - LNF

4/03/2021

- Dew point above 5° : fixed
- Data not logged: restarted logger
- RUN ongoing
- Check CMS Kodel chambers:
 - With std gas mixture: $WP(2mm) = 9500$; $WP(1.4mm)=7000$
 - With ECO2 gas mixture: $WP(2mm) = 10600$; $WP(1.4mm)=8100$
 - Until March 4 $WP(1.4)$ was 7.4 not in plateau

5/03/2021

- Dew point around 4°
- Data logged
- RUN ongoing
- Currents almost stable
- Attenuation factor to 1 -> chambers in stand-by

6/03/2021

- Dew point around 4°
- Data logged
- RUN ongoing
- Attenuation factor to 1 -> chambers in stand-by
 - In order to accumulate charge stand-by HV setting moved to 7.5 KV (Kodel) - 10 kV (GT, EPDT)
- Currents almost stable

7/03/2021

- Dew point around 4° at 10 am
 - At 7:30 am a peak at 12°, then in about 2 hours back to 4°
- Data logged
- RUN ongoing with chambers at 7.5 kV (Kodel) and 10 kV (GT,EPDT)
- Currents almost stable for GT and EPDT, slightly increasing for kodel

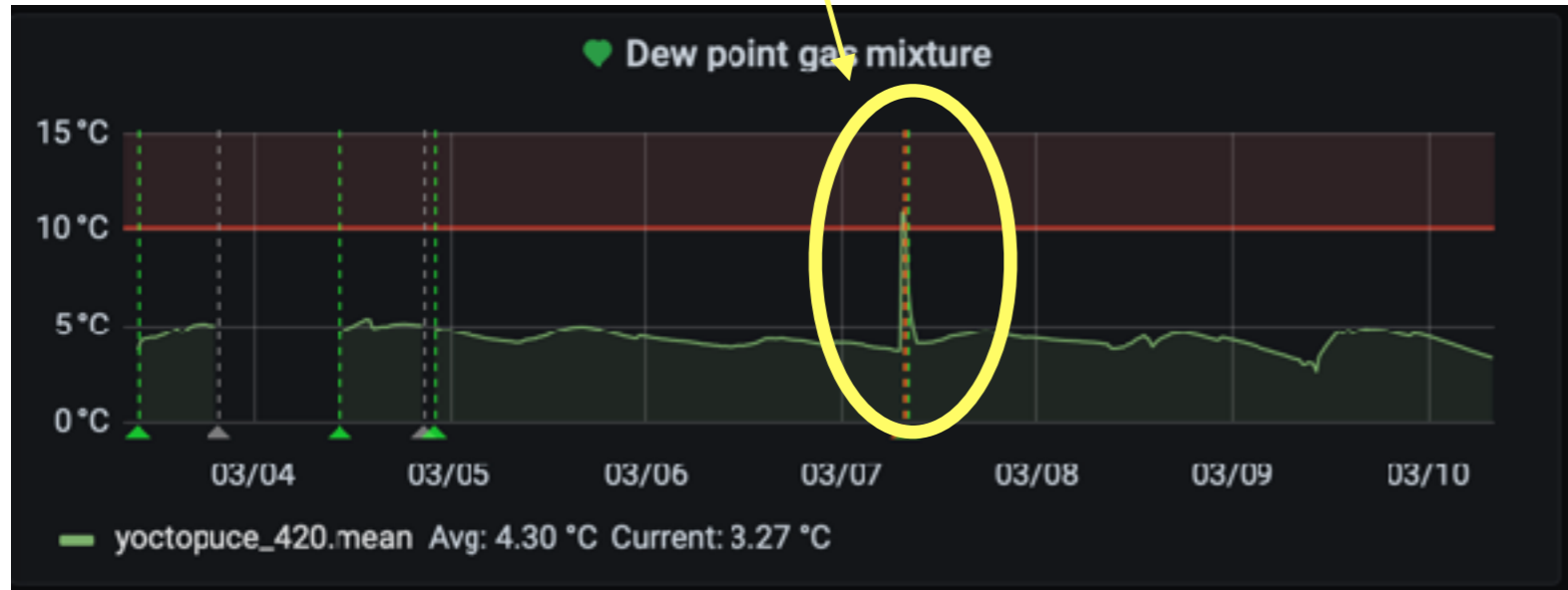
8/03/2021

- Dew point around 3.5° at 10 am
- Data logged
- Attenuation factor to 4.6.
- RUN ongoing with chambers at 8.1 kV (Kodel) and 10.6 kV (GT,EPDT)
- All chambers show stable currents except **kodel bottom increasing!**

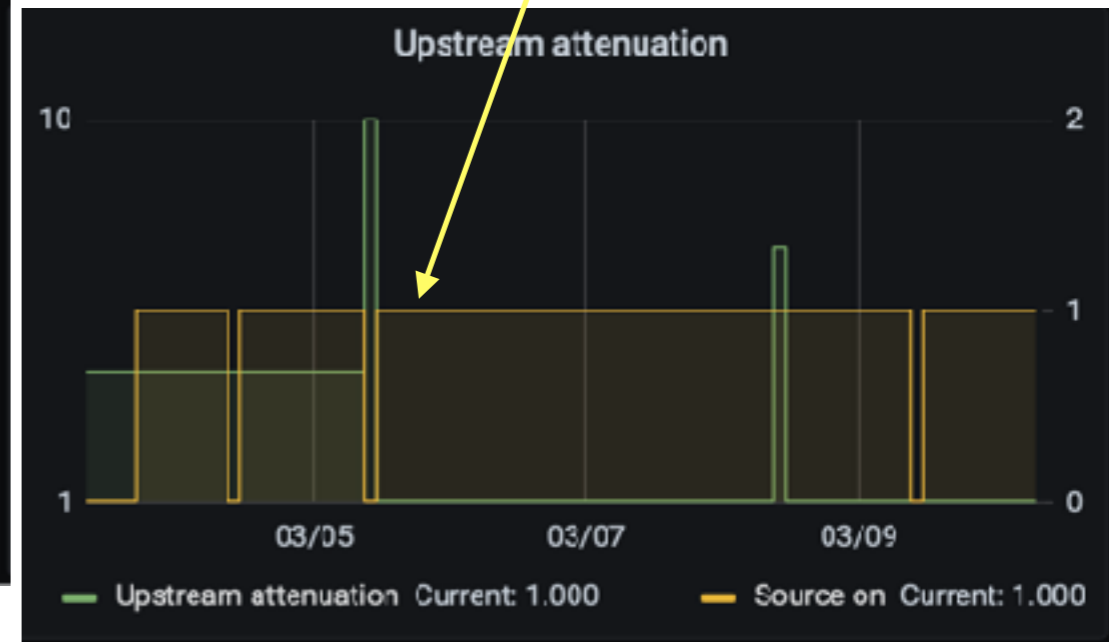
9/03/2021

- Dew point below 3° at 10 am, tuned dew point
- Data logged
- Attenuation factor to 1 and then 2.2
- RUN ongoing with chambers at 7.5 kV (Kodel) and 10. kV (GT,EPDT)
- All chambers show stable currents

Dew point above 10 then back to 4 without intervention

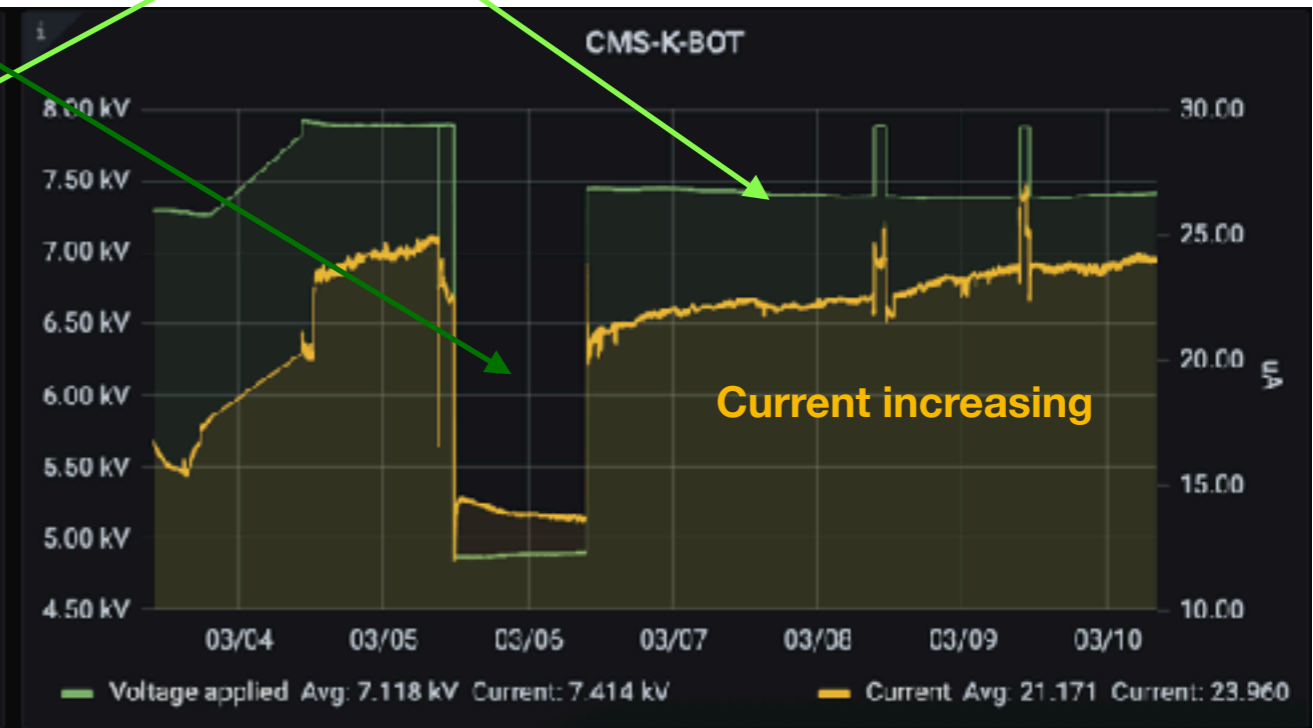
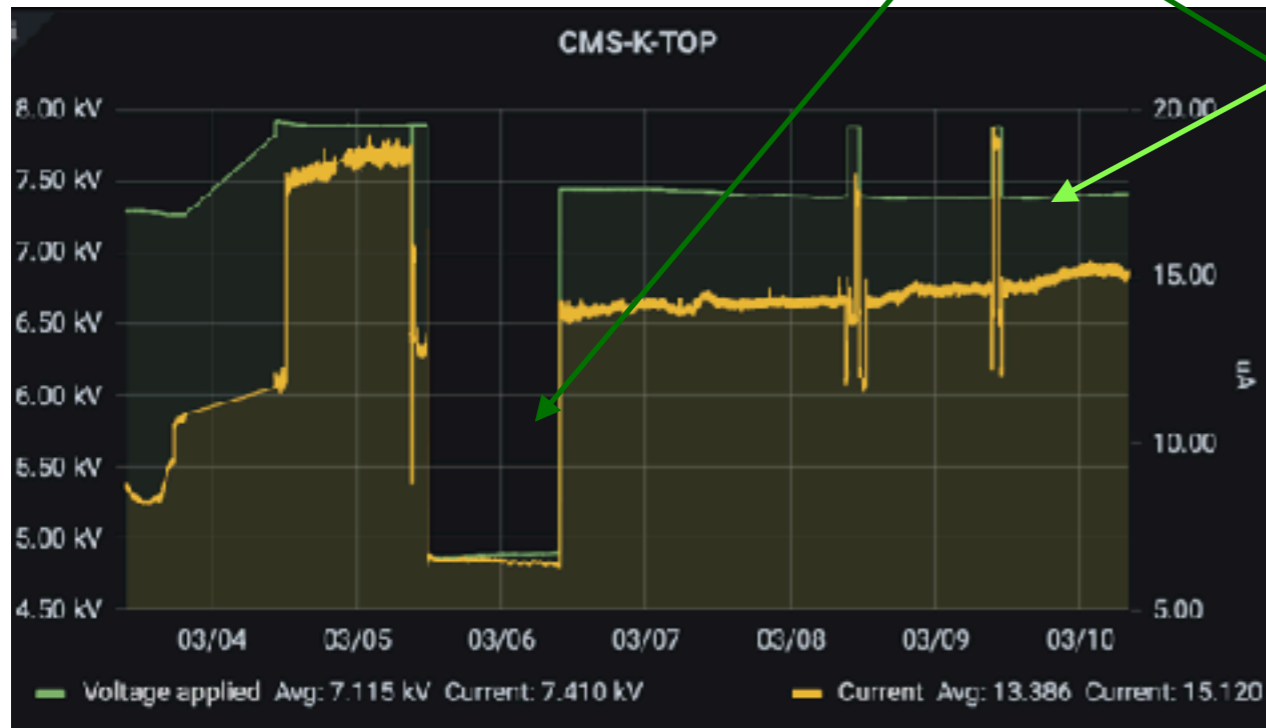


Upstream attenuation to 1



Chambers at 5 kV

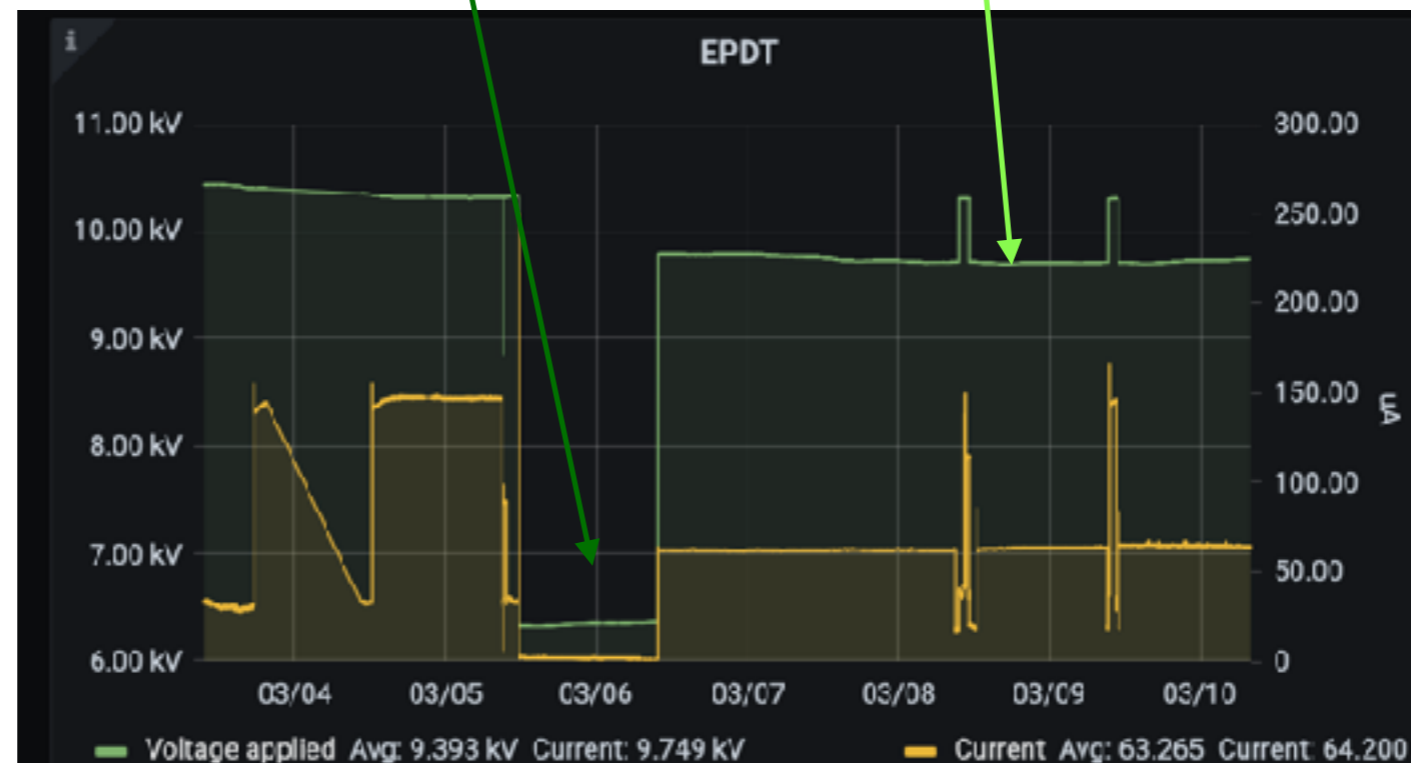
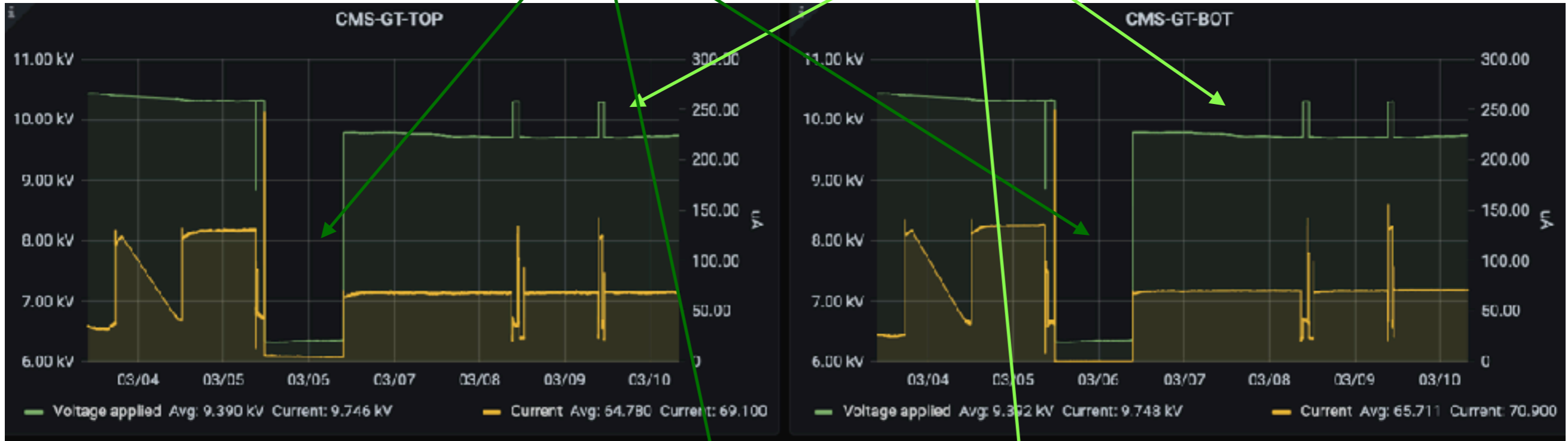
Chambers at 7,6 kV



Currents stable

Chambers at 6,5 kV

Chambers at 10 kV



General considerations

- Kodel chambers were far from plateau until last week.
 - In principle they should stay about 2.5 kV less than 2 mm gaps
 - At moment 2 mm gaps @ 10.6 kV - 1.4 mm gaps @ 8.1 KV
- Looking at excel file with WP from lab test:
 - https://docs.google.com/spreadsheets/d/1EAY7UEc_iD1S_q_PHVdp_6ldK-uiEo_4UwTTCCT0DvU/edit?userstoinvite=lilianacongedo@gmail.com&ts=60464020#gid=0
 - WP should be between 11 and 11.2 kV (P=990 mbar)
 - We are running the chambers at 70%-80% efficiency

A.o.b.

- Plan to do a run with GT chambers to measure rate vs HV and vs Attenuation factor.
- If we agree:
 - we should need to switch off chambers for a while to connect signal cables to the DAQ of CMS consolidation setup
 - We need to understand how to operate the HV
 - We need to plan a dedicated half day to this measurement