
CERN

LHC Gas Monitoring

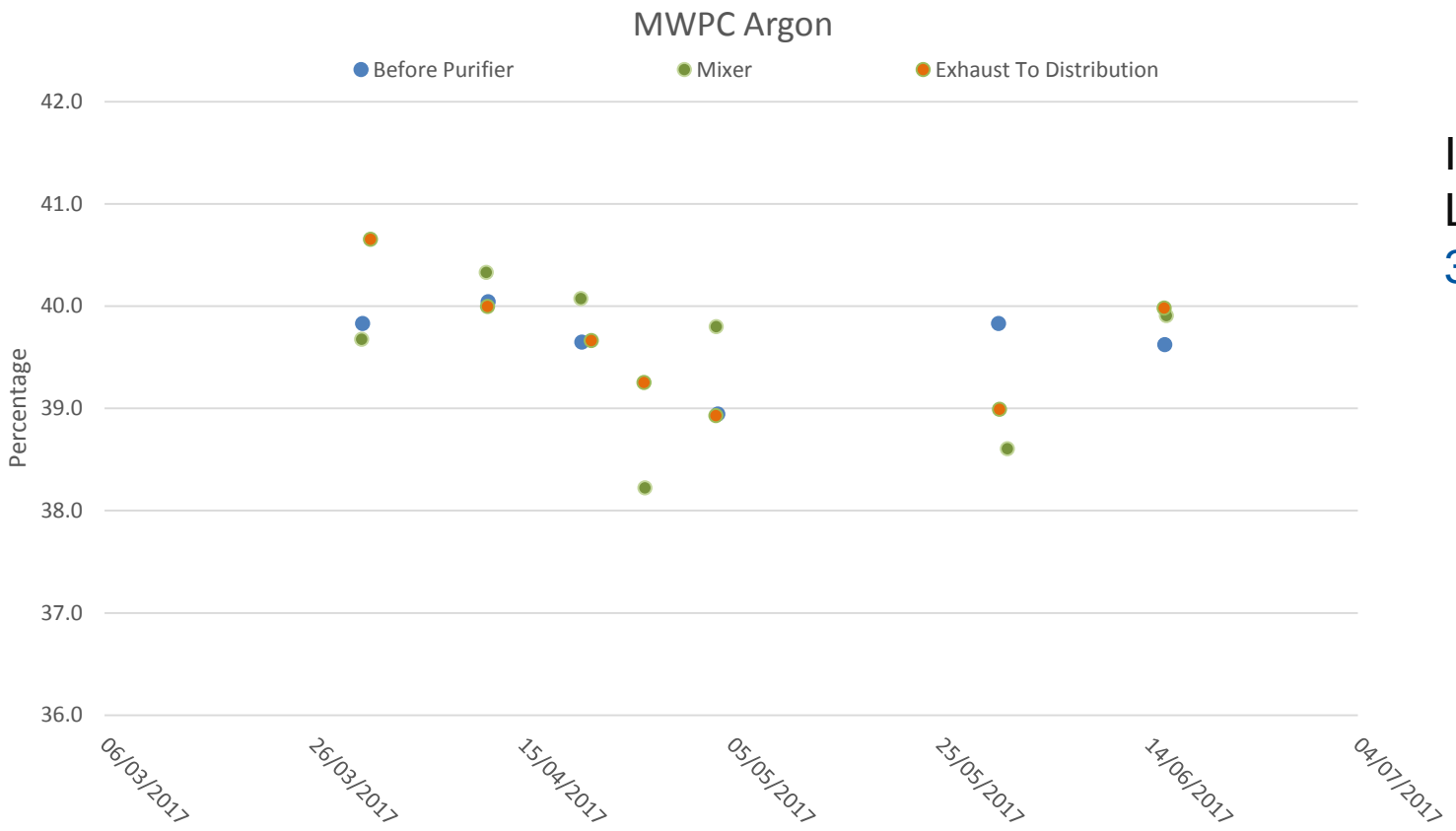
Periodic update

LHCb MWPC

Line	Mixer	ExhToDis	Before Purif
CO2	58.1%	58.5%	58.1%
Ar	39.9%	39.9%	39.6%
CF4	5.1%	5.1%	5.1%
O2	151 ppm	153 ppm	164 ppm
N2	478 ppm	1370 ppm	1380 ppm
O2 PVSS	3.1 ppm	2.9 ppm	3.5 ppm

PVSS O2 values disagree with GC measured ones (that are too high)

LHCb MWPC



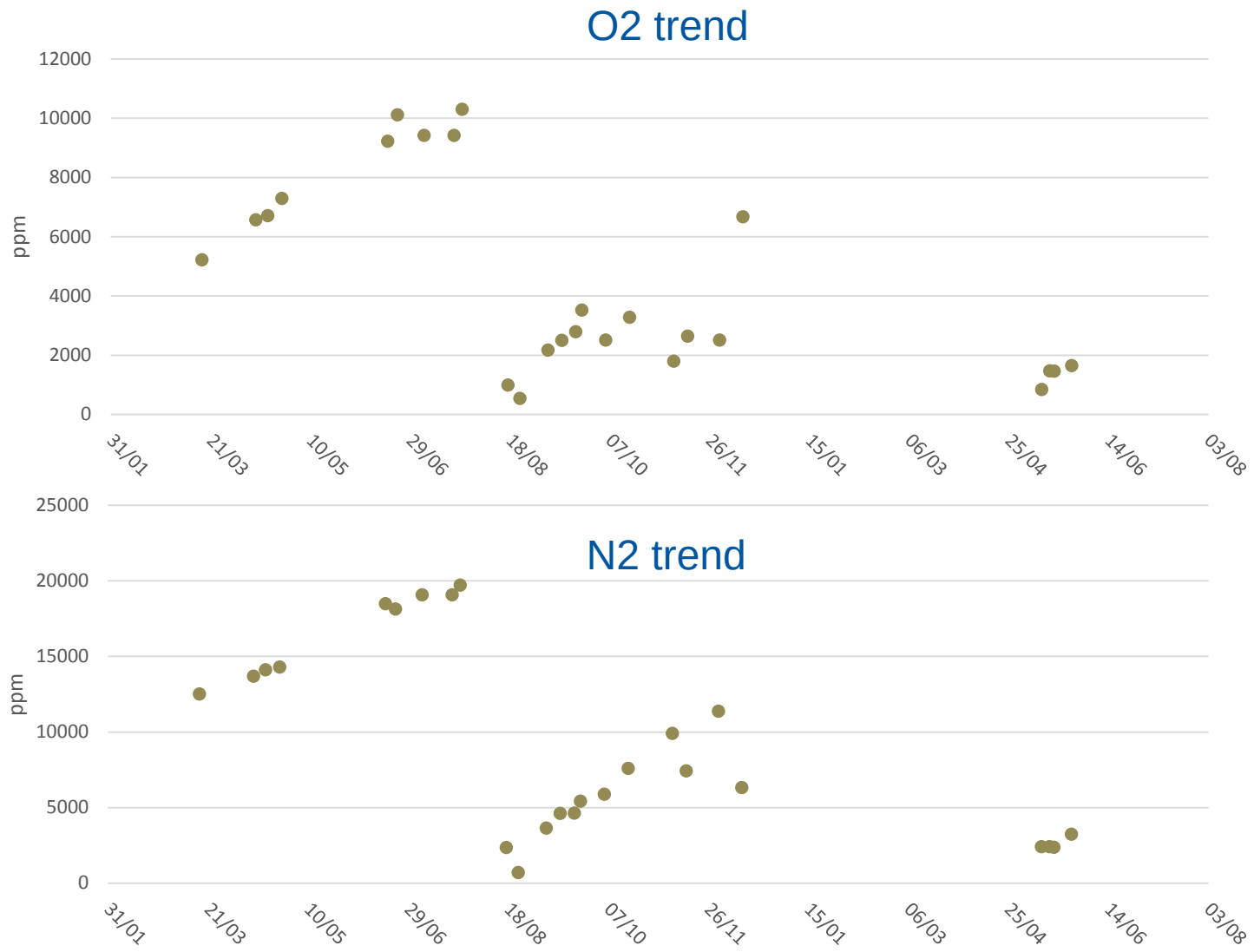
Ideal: 38%
Las year range:
35% - 40%

LHCb RICH1

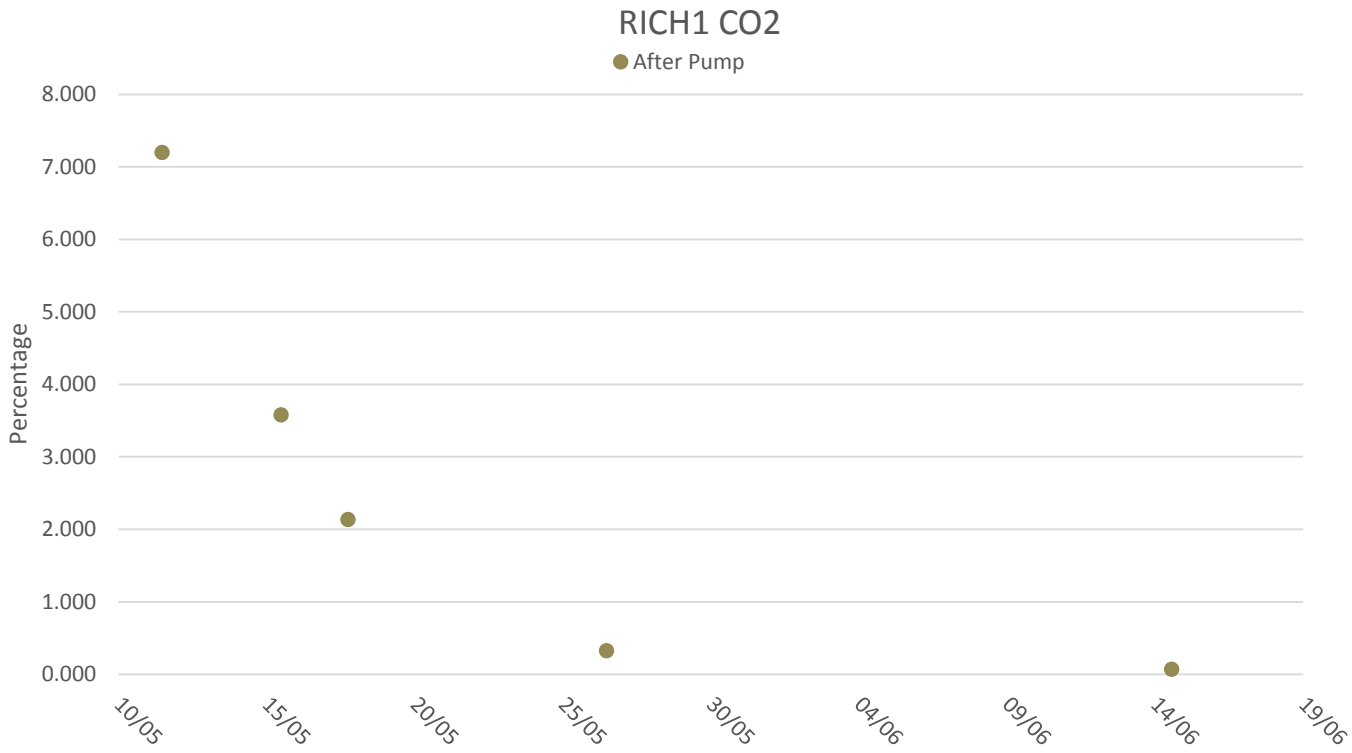
Line	After Pump
C4F10	99.2%
CO2	0.07%
Air	0.69%
O2 O2 from PVSS	3200 ppm 2740 ppm
N2	55240 ppm
O2+N2	0.9%

- CO2 level keeps decreasing
- O2 too high
- Air trend over time is increasing

LHCb RICH1 Air



LHCb RICH1 CO2



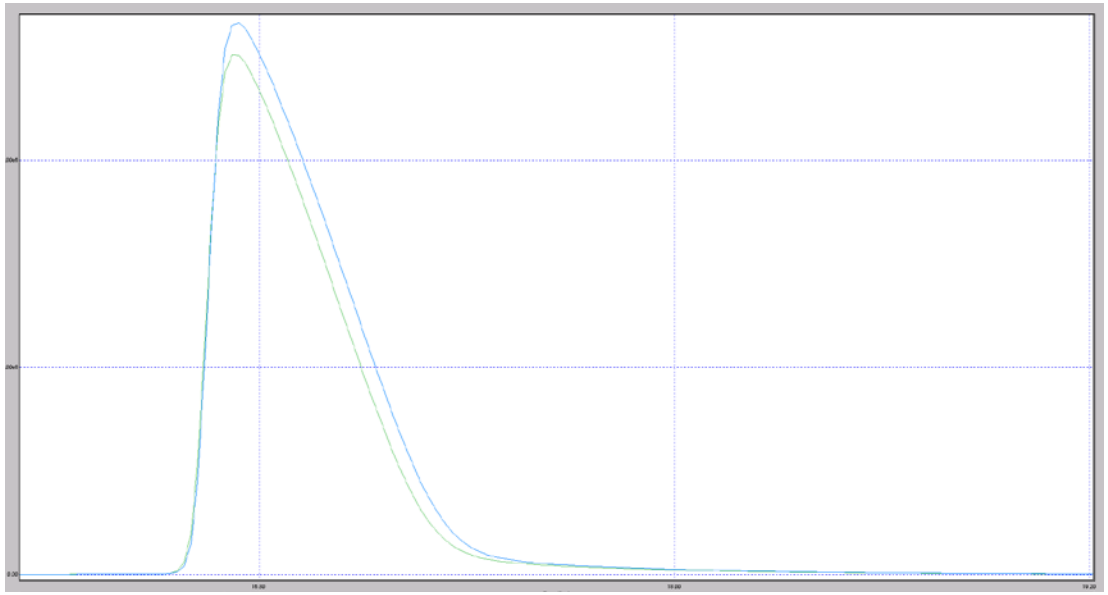
LHCb RICH2

Line	Before Purifier	After Purifier
CF4	92.4%	92%
O2	2580 ppm	2610 ppm
N2	9510 ppm	9680 ppm
CO2 (cal 1)	9.8%	9.7%
CO2 (cal 2)	8.6%	8.4%
CO2 (cal 3)	9.1%	8.9%

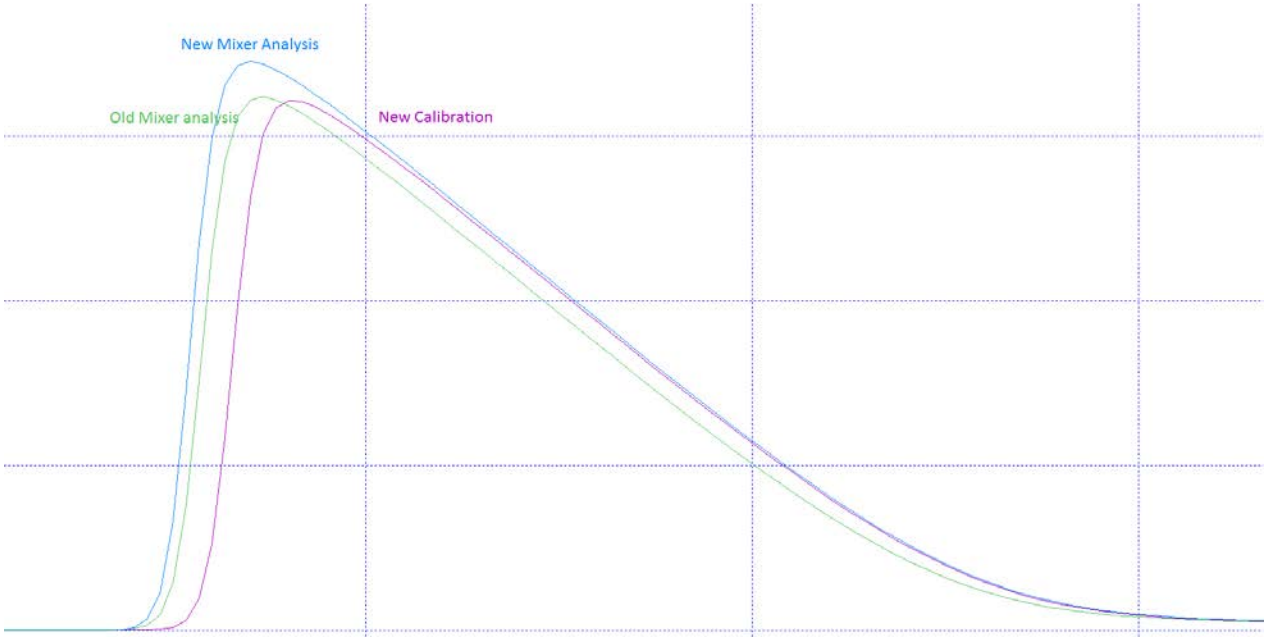
- Cal 1 bottle : 80% Ar, 10% CF4, **10% CO2**
- Cal 2 bottle : 90% CF4, **10% CO2**
- Cal 3 bottle : 45% Ar, 40% CF4, **15% CO2**

CMS Analysis

- Bronkhorst pressure regulator installed on 19/6
- After that, DT method has been recalibrated and problems in the measurements showed up



DT Mixer

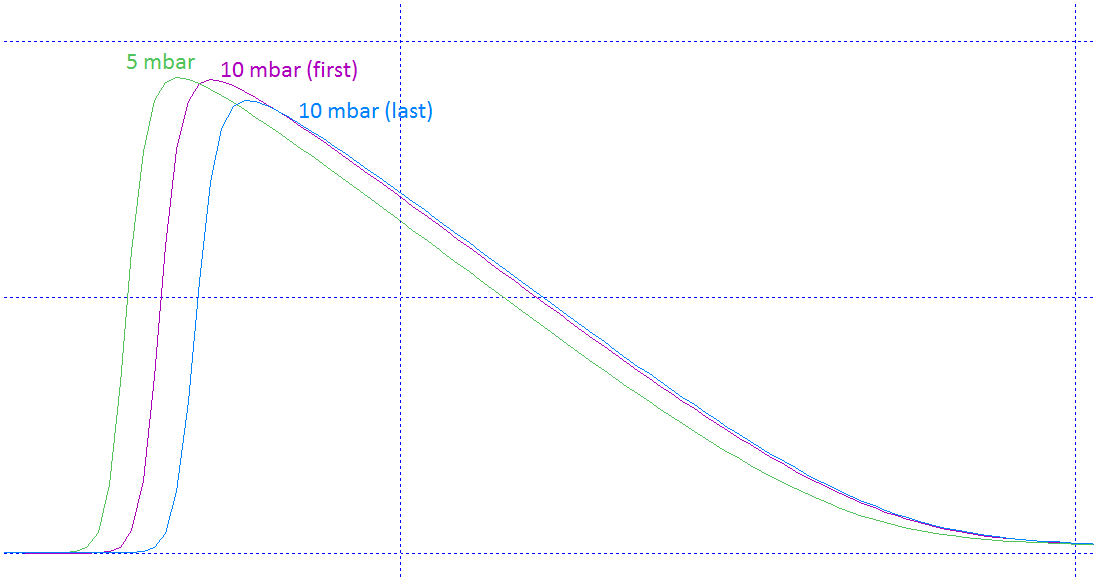


Bronkhorst setpoint = 10 mbar
- New calibration done
- New Mixer analysis done

New analysis	%
Ar	89%
CO2	16.3%

Setpoint test

- Line: DT Mixer, CO2 Peak



Output pressure set to
5, 10, 15 mbar

- It takes time to stabilize
- Changing setpoint leads to different measurement!
- Probably the device is misconfigurated
- Longer test to be done…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