

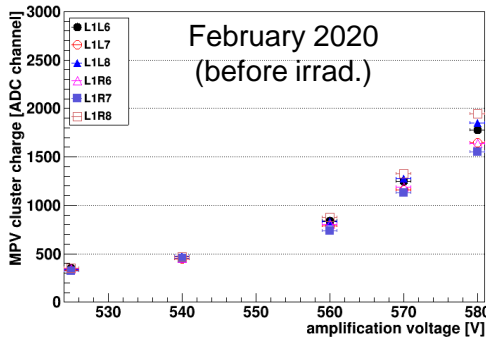
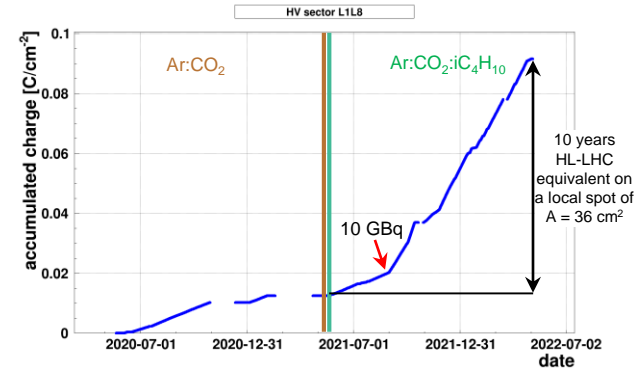
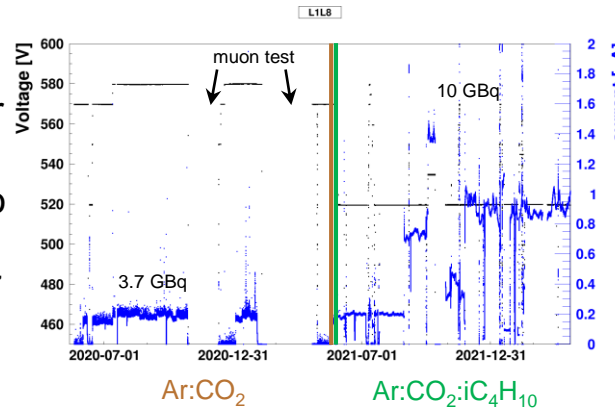
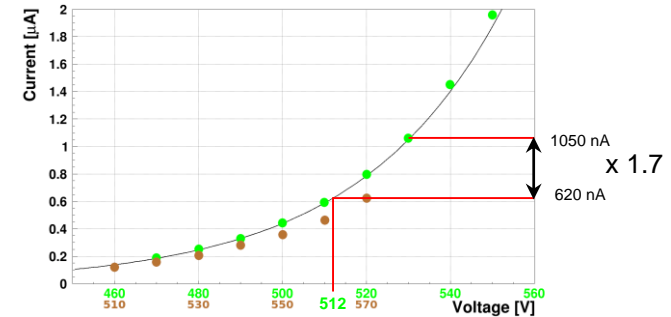
Long Term Neutron Irradiation Studies of Square Meter Sized Resistive Strip Micromegas Detectors

Two different types of gas mixtures were investigated (Ar:CO₂ 93:7 vol% & Ar:CO₂:iC₄H₁₀ 93:5:2 vol%):

- Equal gains at 570 V & 512 V
- 575 V breakthrough voltage under Ar:CO₂
- Possible gain increase of 70 % under Ar:CO₂:iC₄H₁₀ at 530 V

Constant irradiation of the quadruplet detector for two years:

- Better discharge quenching under Ar:CO₂:iC₄H₁₀
- Accumulated charge equivalent to 10 years of HL-LHC in the ATLAS forward muon spectrum at $\eta = 2.7$ on a local spot of 36 cm².



No changes in pulse-height have been observed by a comparison of cosmic muon tracking at the beginning and after the first year of irradiation.

