Contribution ID: **12** Type: **Oral presentation**

Characterisation of the charging up effect in Micromegas detectors

Monday 22 May 2017 16:50 (20 minutes)

During the last decade, a major improvement in the field of the Micro-Pattern
Gaseous Detectors has been reached by adding a layer of resistive strips above the readout strips to reduce drastically the effect of discharges. The resistive strips are separated from the readout strips by a thin layer of insulator. When the detector is operated at high rate some gain reduction is observed over the first seconds or minutes after switch-on, stabilising after some time. Is this related to the presence of the insulator or are there other mechanisms at work?
We report here the results of a detailed study of this effect and compare resistive-strip and standard Micromegas detectors. We will present and quantify the main characteristics of this effect, i.e, the absolute and relative gain drop and the time to reach a stable regime, as a function of the detector configuration and current. In addition we measured the time to go back to initial conditions after stopping the exposure of the detector.

Authors: SAMARATI, Jerome (CERN); ALVAREZ GONZALEZ, Barbara (CERN); BORTFELDT, Jona (CERN); FARINA, Edoardo Maria (Universita e INFN, Pavia (IT)); IENGO, Paolo (CERN); SEKHNIAIDZE, Givi (Universita e INFN, Napoli (IT)); SIDIROPOULOU, Ourania (Bayerische Julius Max. Universitaet Wuerzburg (DE)); WOTSCHACK, Joerg (Aristotle University of Thessaloníki (GR))

Presenter: SAMARATI, Jerome (CERN)

Session Classification: MPGD detector technologies - 4 (Chair: Matt Posik)