Contribution ID: **1098** Type: **Parallel Talk**

Small-pad resistive Micromegas for high-rate environment

Friday, 8 July 2022 12:15 (15 minutes)

The future of HEP experiments foresee new upgrades of the current accelerators (HL-LHC) and the design of high energy and very high intensity new particle accelerators (FCC-ee/hh, EIC, Muon Collider). This opens new challenges to develop cost effective, high efficiency particle detectors operating in high background and high radiation environment.

An R&D project is ongoing in order to consolidate the MPGD technology for particle fluxes up to 10 MHz / cm^2 with a high-granularity low occupancy readout on pads with a dimension of the order of few mm^2. The radiation hardness and the feasibility to build large scale detectors for future high energy physics experiments are also part of the main objectives of the project.

Various prototypes of small-pad resistive Micromegas with different configuration and construction techniques have been built, tested and characterized. In particular the resistive schemes explored are either based on embedded resistors or using uniform Diamond-Like Carbon (DLC) resistive foils. The most recent results in terms of rate capabilities, gain, energy, space and time resolutions will be presented.

In-person participation

No

Primary author: DI NARDO, Roberto (Istituto Nazionale di Fisica Nucleare)

Co-authors: ALVIGGI, Maria Grazia (Istituto Nazionale di Fisica Nucleare); CAMERLINGO, Maria Teresa (Istituto Nazionale di Fisica Nucleare); D'AMICO, Valerio (Istituto Nazionale di Fisica Nucleare); DELLA PIETRA, Massimo (Istituto Nazionale di Fisica Nucleare); GIMMILLARO, Carmen (Università degli Studi Roma Tre); IENGO, Paolo (Istituto Nazionale di Fisica Nucleare); IODICE, Mauro (Istituto Nazionale di Fisica Nucleare); PETRUCCI, Fabrizio (Istituto Nazionale di Fisica Nucleare); SEKHNIAIDZE, Givi (NA); SESSA, Marco (Istituto Nazionale di Fisica Nucleare); DI DONATO, Camilla (Istituto Nazionale di Fisica Nucleare)

Presenter: DI NARDO, Roberto (Istituto Nazionale di Fisica Nucleare)

Session Classification: Detectors for Future Facilities, R&D, novel techniques

Track Classification: Detectors for Future Facilities, R&D, novel techniques