

Establishment of a national laboratory for gaseous detectors in support of the cooperation between Albanian universities and the European project Compact Muon Solenoid (CMS) at CERN, specially for the Muon subsystem of the RPC (Resistive Plate Chambers)

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ABSTRACT

The project aiming to establish the essential infrastructure needed to support the participation of the Albanian Scientific Cluster in the CMS experiment at CERN is in an advanced phase. It will provide the necessary tools and research infrastructure that will enable the CMS Albania UT-UPT Group to carry out its duties with high quality and efficiency. The laboratory will offer Albanian researchers hands-on experience with fundamental particle detection technologies for gaseous detectors, especially for the Resistive Plate Chambers (RPC), helping them build and enhance their expertise in developing both hardware and software systems in compliance with CERN's standards. In addition to supporting fundamental or applied research, this research infrastructure will play a key role in promoting further applications to advanced technologies. The laboratory will be a platform for students to conduct research for their Master's theses and Ph.D. dissertations. This infrastructure is the following step, the first being the establishment of a computational center, in creating the rich environment that will boost high-quality scientific research in Albania, also advancing the application process for full membership at CERN.

KEYWORDS: *RPC, Gaseous Detectors, CMS Experiment at CERN*