

Production and test of BI-RPC detectors for ATLAS Phase II upgrade

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The current RPC system is undergoing a major upgrade, consisting in the installation of approximately 1000 RPC detector units of new generation in the innermost barrel layer of the ATLAS Muon Spectrometer. The goal of the project is to increase the detector coverage, currently limited to approximately 80%, and improve the trigger robustness and efficiency. The production of the gas volumes takes place in a factory in Italy, in MPI and USTC, while the readout panels in Cosenza and USTC. The Italian collaboration is taking care of the construction and test of the chambers located in the large sectors of the ATLAS barrel (BIL). Here we present the state of the art of the production, certification and logistics related to all the components produced at the Italian sites, as well as the assembly line and characterization of the BIL chambers at CERN. In particular, we describe the protocols defined and the instrumentation created for the certification of gas volumes at the Italian production factory, for the construction and certification of the read-out panels in Cosenza and for the assembly and certification with cosmic rays of the detectors at CERN. The certification results of the components produced are analyzed and discussed.

Collaboration

ATLAS Muon

Role of Submitter

The presenter will be selected later by the Collaboration

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