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The ALICE Muon Identifier (MID)

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During the LHC Run-I (2010-2013) and Run-II (2015-2018), the selection of interesting events for muon physics in ALICE was performed by a dedicated muon trigger system, based on 72 single-gap bakelite Resistive Plate Chambers (RPCs), operated in maxi-avalanche mode (ADULT front-end electronics without amplification and a threshold of 7 mV).

From Run-III (starting in 2021) on, in order to fully profit from the increased luminosity of Pb-Pb collisions, the ALICE experiment will run in continuous readout (triggerless) mode and the muon trigger system (MTR) will become a Muon Identifier (MID). The read-out electronics is being upgraded in order to support continuous readout.

Moreover, in order to increase the RPC rate capability and to mitigate possible aging effects, it was decided to operate the detectors with a lower gain, and to replace the ADULT front-end cards with new cards (FEERIC), equipped with an amplification stage. Also, an upgrade of the threshold distribution system to the front-end will allow one to tune thresholds at the single front-end card level, while this was previously only possible at the single-RPC level.

Finally, since some of the RPCs currently installed in ALICE have integrated a non-negligible charge with respect to their certified life-time, about 25% of the detectors will be replaced with new ones, built with a different type of bakelite laminates.

A detailed description of the MTR upgrade and of its current status will be presented in this contribution.

Primary author: Ms TERLIZZI, Livia (Università degli Studi di Torino and INFN Torino)

Co-author: ALICE COLLABORATION

Presenter: Ms TERLIZZI, Livia (Università degli Studi di Torino and INFN Torino)

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