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The Trigger system of the Alice Muon Spectrometer at LHC

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The forward muon spectrometer of the ALICE experiment aims at investigating the properties of strongly interacting matter at the extreme energy density reached in heavy ion collisions at LHC. The trigger system of the spectrometer consists of four planes of RPC (Resistive Plate Chamber) detectors operated in streamer mode, 21k front-end channels and fast-decision electronics, covering an area of 140 m2. It is designed to reconstruct (muon) tracks, in a large background environment, for providing a fast trigger signal. Indeed, a trigger decision is delivered each 25 ns (40 MHz) with a total latency of 800 ns. The hit position on the RPC is measured in two orthogonal dimensions with an accuracy of the order of 1 cm. Selected aspects of the design and of the installation, which has lasted from 2006 to 2007, of such a large device will be discussed. The performances, of both detectors and electronics, measured with dedicated test tools and cosmic rays during the commissioning runs carried out in the first half of year 2008 will be presented.

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