

L1 Trigger efficiency estimation of RPC detector in CMS experiment

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Here we present the methods for the estimation of L1 trigger efficiency of RPC detector placed in the muon chamber of CMS experiment. Two independent methods, Tag&Probe and DTvsRPC, have been tested for RPC trigger efficiency measurement using cosmic muon data and Monte-Carlo cosmic muon sample. The cosmic muon data is collected during Cosmic Run At Full Tesla (CRAFT08) during the year 2008 using CMS experiment. Two methods mainly differ in geometrical acceptance regions (cracks/gaps). RPC trigger efficiency estimated using Tag&Probe and DTvsRPC methods is in good agreement (differ by 2-3%) in the central regions of the RPC detector. RPC trigger efficiency comes out to be almost 90% in the central region of the detector using both the methods.

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