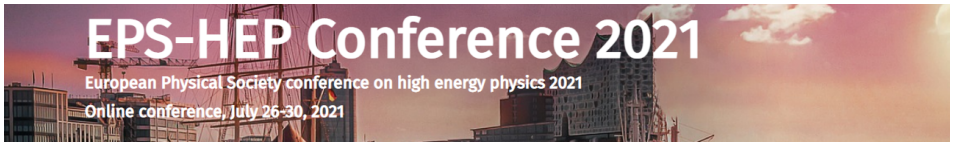

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Trigger primitive generation algorithm in the CMS barrel muon chambers during HL-LHC

This poster presents an update on the Analytical Method (AM) algorithm for trigger primitive (TP) generation in the CMS Drift Tube (DT) chambers during the High Luminosity LHC operation (HL-LHC or LHC Phase 2). The algorithm has been developed and validated both in software with an emulation approach, and through hardware implementation tests. The algorithm is mainly divided in the following steps: a grouping (pattern recognition) step that finds the path of a given muon, a fitting step to extract the track parameters (position and bending angle), a correlation step that matches the information from the different super-layers and with signal from the Resistive Plate Chambers. Agreement between the software emulation and the firmware implementation, has been verified using different data samples, including a sample of real muons collected during 2016 data taking. This poster also includes an update of the grouping step using a pseudo-bayes classifier.

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