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The ALICE EMCal High Level Triggers

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The ALICE detector yields a huge sample of data, via millions of channels from different sub-detectors. Online data processing must be applied to select and reduce the data volume in order to increase the significant information in the stored data.

ALICE applies a multi-level hardware trigger scheme where fast detectors are used to feed a three-level deep chain, L0-L2. The High-Level Trigger (HLT) is a fourth filtering stage sitting logically between the L2 trigger and the DAQ (Data AcQuisition) event building.

The EMCal detector comprises a large area electromagnetic calorimeter that extends the measured particle momenta up to pT=200GeV/c, thus ALICE capability to perform jet reconstruction is improved by measuring the neutral energy component of jets, photons and neutral mesons.

An online reconstruction and trigger chain has been developed within the HLT framework to sharpen the EMCal hardware triggers, by combining the central barrel tracking information with the shower reconstruction (clusters) in the calorimeter, thus allowing to obtain a clear and unbiased sample of electron and jet events, both in p-p and A-A LHC runs.

In the present talk the functionalities of the software components of the EMCal/HLT online reconstruction and trigger chain will be discussed. The status and results of the development work will be shown with particular reference to the online chain's physics performance.

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