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A Summary Trigger Unit for the ALICE Electromagnetic Calorimeters

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After a successful three-year data taking period, the Summary Trigger Unit, a FPGA-based embedded device implementing the ALICE EMCal L1 trigger algorithms, has demonstrated efficient real-time selection of events with high transverse momentum jets and photons.

LHC LS1 has been the opportunity for ALICE to upgrade its calorimetry system with DCal, a second arm situated back-to-back in azimuth to EMCal.

The

exibility and scalability of STU hardware design has then proven to be a major asset to extend its use to both DCal and PHOS calorimeters implementing even more complex L1 Jet Patch algorithms featuring on-line configurable patch sizes, spatial windowing over DCal and PHOS aggregated regions, and dynamic threshold adjustment based on median background estimation through EMCal-DCal custom serial link communication.

The poster will present all these new STU developments for the upcoming LHC Run 2.

On behalf of collaboration:

ALICE

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