

# Performance of the readout system of the ALICE ZDC calorimeters in LHC Run 3

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The ALICE ZDCs provide information about event geometry in heavy ion hadronic collisions through the detection of spectator nucleons and allow to estimate the delivered luminosity. They are also very useful in p-A collisions, allowing an unbiased estimation of collision centrality.

The Run 3 operating conditions will involve a tenfold increase in instantaneous luminosity in heavy-ion collisions, with event rates that, taking into account the different processes, could reach 5 MHz in the ZDCs. The challenges posed by this demanding environment lead to a redesign of the readout system and to the transition to a continuous acquisition. The new system is based on 12 bit, 1 Gsps FMC digitizers that will continuously sample the 26 ZDC channels. Triggering, pedestal estimation and luminosity measurement will be performed on FPGA directly connected to the frontend.

In this contribution the new readout system will be presented and the performances foreseen in Run 3 will be discussed.

## **TIPP2020 abstract resubmission?**

No, this is an entirely new submission.

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**Author:** CORTESE, Pietro (Universita del Piemonte Orientale (IT))

**Presenter:** CORTESE, Pietro (Universita del Piemonte Orientale (IT))

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