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ALICE data processing for Run 3 and Run 4 at the LHC

Thursday 30 July 2020 08:00 (20 minutes)

During the upcoming Runs 3 and 4 of the LHC, ALICE will take data at a peak Pb-Pb collision rate of 50 kHz. This will be made possible thanks to the upgrade of the main tracking detectors of the experiment, and with a new data processing strategy. In order to collect the statistics needed for the precise measurements that ALICE aims at, a continuous readout will be adopted. This brings about the challenge of handling unprecedented data rates. The ˜3.5 TB/s of raw data from the detectors will be reduced to about 600 GB/s on the First Level Processing (FLP) nodes, and sent to the Event Processing layer for further processing and reduction to less than 100 GB/s of data to be stored permanently. This synchronous processing stage, which will include reconstruction, calibration and compression procedures, will be followed by an asynchronous one to account for final calibrations. Quality Control (QC) will be intensively used in all the processing stages. This talk illustrates the processing flow for ALICE in Runs 3 and 4, with emphasis on the components of the synchronous processing. The chosen software design will be described. An overview of the data analysis framework is included as well.

I read the instructions

Secondary track (number)

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