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Real-time analysis in Run 3 with the LHCb experiment

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Second stage of high-level trigger at the LHCb, deployed on a CPU server farm, not only selects events but performs an offline-quality alignment and calibration of the detector and uses this information to allow physics analysts to deploy essentially their full offline analysis level selections (including computing isolation, flavour tagging, etc) at the trigger level. This “real time analysis” concept has also allowed LHCb to fully unify its online and offline software codebases. We cover the design and performance of the system which will be deployed in Run 3, with particular attention to the physics performance of the new algorithms.

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Collaboration / Activity

LHCb

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