

Monitoring reconstruction software in LHCb

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The LHCb detector at the LHC is currently undergoing a major upgrade to increase full detector read-out rate to 30 MHz. In addition to the detector hardware modernisation, the new trigger system will be software-only. The code base of the new trigger system must be thoroughly tested for data flow, functionality and physics performance. Currently, the testing procedure is based on a system of nightly builds and continuous integration tests of each new code development. The continuous integration tests are now extended to test and evaluate high-level quantities related to LHCb's physics program, such as track reconstruction and particle identification, which is described in this paper. Before each merge request, the differences after the change in code are shown and automatically compared using an interactive visualisation tool, allowing easy verification of all relevant quantities. This approach gives an extensive control over the physics performance of the new code resulting into better preparation for data taking with the upgraded LHCb detector at Run 3.

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