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Gaussino - a Gaudi-based core simulation framework

Tuesday, 5 November 2019 14:00 (15 minutes)

The increase in luminosity foreseen in the future years of operation of the Large Hadron Collider (LHC) creates new challenges in computing efficiency for all participating experiment. To cope with these challenges and in preparation for the third running period of the LHC, the LHCb collaboration currently overhauls its software framework to better utilise modern computing architectures. This effort includes the LHCb simulation framework (Gauss).
In this talk, we present Gaussino, an LHCb-independent simulation framework which forms the basis for LHCb's future simulation framework which incorporates the reimplemented or modernised core features of Gauss. It is built on Gaudi's functional framework making use of multiple threads. Event generation is interfaced to external generators with an example implementation of a multi-threaded Pythia8 interface being included. The detector simulation is handled by the multithreaded version of Geant4 with an interface allowing for the parallel execution of multiple events at the same time as well as for parallelism within a single event. Additionally, we present the integration of DD4hep geometry description into Gaussino to handle the detector geometry and conversion.

Consider for promotion

No

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