

Fast Simulations at LHCb

Wednesday, 29 July 2020 15:30 (20 minutes)

The LHCb detector at the LHC is a single-arm forward spectrometer designed for the study of b- and c-hadron states. During Run 1 and 2, the LHCb experiment has collected a total of 9/fb of data, corresponding to the largest charmed hadron dataset in the world and providing unparalleled datasets for studies of CP violation in the B system, hadron spectroscopy and rare decays, not to mention heavy-ion and fixed-target datasets. The LHCb experiment is currently undergoing an upgrade to nearly all parts of the detector to cope with the increased luminosity of Run 3 and beyond. Simulation for the analysis of such datasets is paramount, but the detailed simulation of the detector response would be prohibitively slow and prevent the production of sufficient simulated events to fully exploit the datasets that will be collected. In this talk, we explore the suite of fast simulations which LHCb has employed to meet the needs of the Run 3 and beyond, including the reuse of the underlying event and parameterized simulations, and the possibility of porting the framework to multithreaded environments.

I read the instructions

Secondary track (number)

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