

Recent developments in vertexing and tracking methods

After a long shutdown, LHC is resuming operation with a center-of-mass energy of 13 TeV. In order to reach the target luminosity not only the collision frequency, but also the beam intensity will be higher than in Run 1. As a consequence, the average number of events underlying the signal events (pile-up) will rise from about 15 to about 25. The LHC collaborations have used the shutdown period to improve their tracking and vertexing in order to meet the more demanding requirements. I will give a summary of the most important developments. The LHC collaborations, in particular ATLAS and CMS, already have plans to upgrade their inner tracking devices for the high-luminosity phase of the LHC, scheduled to begin in the next decade. Besides having to deal with an even higher amount of pile-up, these devices are designed to trigger on high-momentum tracks and will thus require real-time track finding. I will describe the current activities in this field. Finally, I will give a brief outline of tracking and vertexing in future experiments such as Belle II and CBM.

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