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## The performance of the ATLAS Inner Detector tracking trigger in high pileup collisions at 13 TeV at the Large Hadron Collider (Run-2) and plans for Run-3

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The performance of the Inner Detector tracking trigger of the ATLAS experiment at the LHC is evaluated for the data taking period of Run-2 (2015-2018). The Inner Detector tracking was used for the muon, electron, tau and b-jet triggers, and its high performance is essential for a wide variety of ATLAS physics programs such as many precision measurements of the Standard Model and searches for new physics. The detailed efficiencies and resolutions of the trigger in a wide range of physics signatures are presented for the Run 2 data. From the upcoming Run-3, starting in 2022, the application of Inner Detector tracking in the trigger is planned to be significantly expanded, in particular full-detector tracking will be utilized for hadronic signatures (such as jets and missing transverse energy triggers) for the first time. To meet computing resource limitation, various improvements, including machine-learning based track seeding, have been developed.

### In-person participation

Yes

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