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Improvements to ATLAS track reconstruction for Run-2

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Run-2 of the LHC will provide new challenges to track and vertex reconstruction with larger energies, denser jets and higher rates. We will discuss performance enhancements due to the Insertable B-layer (IBL), a fourth pixel layer which has been added to the innermost part of the ATLAS detector. We will also discuss improvements to the track reconstruction developed during the two year shutdown of the LHC. These include novel techniques which improve the tracking performance in the dense cores of jets, optimization for the expected conditions, and an extended software campaign which has led to a factor of three decrease in the CPU demands for each recorded event.

The commissioning of the detector in preparation for Run-2 using cosmic data and early collision data will also be discussed.

Oral or Poster Presentation

Poster

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