

Experience of using ACTS to implement GBTS as a new seeding method for the ATLAS ITk.

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The High Luminosity LHC (HL-LHC) is set to begin in 2029 and will be Run 4 of the ATLAS detector. As part of the phase 2 upgrade, the ATLAS Inner tracking system will be replaced with an all-silicon Inner Tracker(ITk). The higher luminosity will cause an increase in pileup, the number of interactions per crossing, resulting in more tracks, increasing the computational complexity of track reconstruction. A Common Tracking Software (ACTS) is an experiment-independent software toolkit, for the development of track reconstruction software. This talk will describe importing a new seeding method, GBTS (Graph Based Track Seeding), into this platform and implementing the ACTS algorithm into ATLAS software. This will be discussed as a case study of using the ACTS platform for the ATLAS ITk.

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Session Classification: Analysis and Reconstruction Methods

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