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## The Track Extrapolation package in the new ATLAS Tracking Realm

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The ATLAS reconstruction software requires extrapolation to arbitrary oriented surfaces of different types inside a non-uniform magnetic field. In addition multiple scattering and energy loss effects along the propagated trajectories have to be taken into account. A good performance in respect of computing time consumption is crucial due to hit and track multiplicity in high luminosity events at the LHC and the small time window of the ATLAS high level trigger.

Therefore stable and fast algorithms for the propagation of the track parameters and their associated covariance matrices in specific representations to different surfaces in the detector are required.

The recently developed track extrapolation package inside the new ATLAS offline tracking software is presented. Timing performance studies, integration tests with client algorithms and results on ATLAS 2004 Combined Test Beam data are given.

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