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The global χ^2 track fitter in ATLAS

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While most high energy experiments use track fitting software that is based on the Kalman technique, the ATLAS offline reconstruction has several global track fitters available. One of these is the global χ^2 fitter, which is based on the scattering angle formulation of the track fit. One of the advantages of this method over the Kalman fit is that it can provide the scattering angles and related quantities (e.g. the residual derivatives) to the alignment algorithms. The algorithm has been implemented in the new common tracking framework in ATLAS, the philosophy of which is to improve the modularity and flexibility of the tracking software. This flexibility has proven crucial for the understanding of the data from the testbeam and cosmic runs. An overview of recent results will be presented, in particular the results from the combined tracking with the inner detector and the muon spectrometer using the cosmic data.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

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