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Overview of the LHCb Tracking System and its Performance on Simulation and on First Data

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The LHCb Tracking system consists of four major sub-detectors and a dedicated magnet. A sequence of algorithms have been developed to optimally exploit the capability of all tracking sub-detects. Different configurations of the same algorithms are used to reconstruct tracks at various stages of the trigger system, in the standard offline pattern recognition and under initial conditions of real data taking, which e.g. still suffers from large misalignments. To scope with all the corresponding requirements the algorithms have been designed to be extremely flexible and simultaneously optimized on efficiency, purity and CPU consumption. We will give an overview of the LHCb tracking algorithms and report on their performance base on the latest simulations, on cosmic data and on data from beam injection tests.

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