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Event Reconstruction Algorithms for modern HEP Experiments

Friday, 13 September 2013 16:00 (1 hour)

Development of fast and efficient event reconstruction algorithms is an important and challenging task for modern high energy physics experiments. The event reconstruction algorithms have to process terabytes of input data produced in particle collisions. In this lecture an overview of selected event reconstuction algorithms will be given on the example of the Compressed Baryonic Matter (CBM) experiment at the future FAIR facility. Event reconstruction containes different steps including track and ring finding and fitting, particle identification, particle finding etc. Developed track reconstruction algorithms are based on Kalman Filter, Cellular Automaton and Track Following methods. In RICH ring finding is based on Hough Transform method, fitting is based on circle or ellipse fit methods. Optimization and parallelization of the algorithms will be discussed.

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