Contribution ID: **453** Type: **talk**

Track Fitting in Belle II: the GENFIT Library and its Performance

Saturday 25 July 2015 10:30 (15 minutes)

We discuss track fitting as implemented in the Belle II experiment currently under construction at KEK in Tsukuba, Japan. Track fitting sits at the interface of physics analysis and detector data, is essential to the tasks of detector calibration and alignment, and it also is an integral part of Belle II's high-level trigger. To address the variety of tasks, the track-fitting software, initially based on the GENFIT library, underwent significant redesign. The revised version aims at being experiment-independent and is now the default track-fitting software in the Belle II and PANDA experiments. It implements a variety of track-fitting algorithms, provides a data storage model which allows storage at differnet levels of detail and provides high-level operations on tracks such as combinations of tracks from different subdetectors, it provides visualization, and supports all commonly employed types of tracking detectors. It provides a Runge-Kutta type track extrapolation code with handling of energy loss and multiple scattering. It interfaces to the commonly used Millipede II software for detector calibration and alignment, and to the experiment-independent vertexing library RAVE. Our contribution will discuss design choices and the performance of the software in its different roles at the Belle II experiment.

Primary author: SCHLÜTER, Tobias (LMU München)

Presenter: SCHLÜTER, Tobias (LMU München)

Session Classification: Detector R&D and Data Handling

Track Classification: Detector R&D and Data Handling