Contribution ID: **96**   Type: **Talk**

Performance of Belle II tracking in central drift chamber

Thursday 4 April 2019 12:30 (25 minutes)

The tracking system of the Belle II consists of the silicon vertex detector and cylindrical drift chamber, both operating in a magnetic field created by the main solenoid of 1.5 T and final focusing magnets. The drift chamber consists of 56 layers of sense wires, arranged in interleaved axial and stereo superlayers, to assist track finding and provide full 3D tracking. The drift chamber serves as the main detector for track finding in Belle II. Two distinct track finding algorithms, local and global, are employed for this purpose and the found track candidates are combined, fitted and extrapolated into the silicon vertex detector using the combinatorial Kalman filter algorithm. A distinct feature of the Belle II tracking is its modularity allowing for changes in the algorithm sequence, to optimize the overall performance. Another feature is a use of multivariate estimators, for noise filtering and track-candidate selection. The reconstruction is tested on e+ and e- collision data collected in phase 2 operation during spring 2018. The good performance of the drift chamber and tracking reconstruction allowed rediscovery of many physics channels and was essential for tuning of the accelerator parameters

Authors: BELLE II TRACKING GROUP; GLAZOV, Alexander (Deutsches Elektronen-Synchrotron (DE)); PAOLONI, Eugenio (INFN Pisa)

Presenter: GLAZOV, Alexander (Deutsches Elektronen-Synchrotron (DE))

Track Classification: 2: Real-time pattern recognition, fast tracking and performance evaluation