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## Alignment and Calibration Framework for the Belle II detector

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The Belle II experiment is approaching its first physics run in 2018. Its full capability to operate at the precision frontier will need not only excellent performance of the SuperKEKB accelerator and the detector, but also advanced calibration methods combined with data quality monitoring.

To deliver data in a form suitable for analysis as soon as possible, an automated Calibration Framework (CAF) has been developed. The CAF integrates various calibration algorithms and their input collection methods for event-level data. It allows execution of the calibration workflow using different backends from local machines to a computing cluster, resolution of dependencies among algorithms, management of the produced calibration constants, and database access across possible iterations.

One of the main algorithms fully integrated in the framework uses Millepede II to solve a large minimization problem emerging in the track-based alignment and calibration of the pixel and strip detector, the central drift chamber, and the muon system. Advanced fitting tools are used to properly describe the detector material and field and include measurements of different sub-detectors into a single global fit required for Millepede.

This talk will present the design of the calibration framework, the integration of the Millepede calibration, and its current performance.

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