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## Alignment for the first precision measurements at Belle II

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On March 25th 2019, the Belle II detector recorded the first collisions delivered by the SuperKEKB accelerator. This marked the beginning of the physics run with vertex detector.

The vertex detector was aligned initially with cosmic ray tracks without magnetic field simultaneously with the drift chamber. The alignment method is based on Millepede II and the General Broken Lines track model and includes also the muon system alignment and part of drift chamber calibrations. To control weak modes, we employ sensitive validation tools and various track samples can be used as alignment input, from straight cosmic tracks to mass-constrained decays.

With increasing luminosity and experience, the alignment is approaching the target performance, crucial for the first physics analyses in the era of Super-B-Factories. We will present the software framework for the detector calibration and alignment, the results from the first physics run and the prospects in view of the experience with the first data.

### Consider for promotion

No

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