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Integration and characterization of the vertex detector in SuperKEKB commissioning Phase 2

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As an upgrade of asymmetric e+e- collider KEKB, SuperKEKB aims to increase the peaking luminosity by a factor of 40 to 8*10^{35}cm^{-2}s^{-1}. The SuperKEKB commissioning is achieved in 3 phases. The Phase 1 was successfully finished in June.2016. Now the commissioning is working towards the Phase 2 targeting to reach the luminosity of 1*10^{34}cm^{-2}s^{-1}. In Phase 2, the beam induced background versus luminosity and beam current will be investigated, to ensure a radiation safe operation environment for the Belle II vertex detector during the Physics data taking in Phase 3. The final focusing magnets will be installed and partial Belle II detector will be rolled in. Closed to the beam pipe, 2 pixel and 4 double-sided strip detector layers will be installed, together with the dedicated radiation monitors, FANGS, CLAWS and PLUME, which aims at investigating the backgrounds near the interacting point. The Phase 2 vertex detector integration was practiced and the combined beam test was accomplished at DESY. In this talk, the status of the vertex detector and the beam tests results are presented.

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