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Recent Performance of SuperKEKB

Monday 3 March 2025 11:00 (30 minutes)

SuperKEKB operations resumed in 2024 after the first long shutdown (LS1). A nonlinear collimator was installed to reduce an impedance while keeping background mitigation. Sudden beam loss (SBL) events have been observed when the beam current increases for these years. It is difficult to explain with ordinary beam instabilities, however, several types of monitors have been installed to observe turn-by-turn orbit for each bunch and acoustic sensors to detect discharge noise around a collimator head. The highest luminosity of 5.1 $\times$ 10^{34} $cm^{-2}s^{-1}$ was achieved with 1.63 A in the LER and 1.26 A in the HER. The β_y^* was 1 mm, β_x^* in the LER was reduced from 80 mm to 60 mm to equalize Piwinski angle to be 12 between the LER and the HER. We present the recent performance of SuperKEKB which predicts the future high energy and high luminosity colliders.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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