



Contribution ID: 1439 Contribution code: TUOGB1

Type: **Contributed Oral Presentation**

Recent progress of SuperKEKB project and future prospect

Tuesday, 9 May 2023 11:30 (20 minutes)

SuperKEKB is a positron-electron collider with a nano-beam scheme and continues to achieve the world's highest luminosity for the production of B meson pairs. The luminosity performance has been improved by the adoption of the crab-waist scheme. The nano-beam scheme allows the vertical beta function at the interaction point (IP) to be much smaller than the bunch length. The vertical beta function and the beam size at the collision point are the smallest in the world among colliders. As the result, the peak luminosity which is larger than twice the predecessor KEKB record has been achieved in 2022. Recent progress will be presented, and then the problems and issues to be overcome will be discussed for further improvement of the luminosity performance. We had a long shutdown (LS1) since 2022 summer to upgrade both the Belle II detector and the machine. We will report the strategy of luminosity improvement after LS1.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

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Session Classification: MC01.1 - Colliders and other Particle Physics Accelerators (Contributed)

Track Classification: MC1: Colliders and other Particle Physics Accelerators: MC1.A02: Lepton Circular Colliders