

# The Belle II Upgrade Program

*Thursday 18 July 2024 08:48 (18 minutes)*

The Belle II experiment at the SuperKEKB  $e^+e^-$  collider started recording collision data in 2019, with the ultimate goal of collecting  $50 \text{ ab}^{-1}$ . The wealth of physics results obtained with the current data sample of  $424 \text{ fb}^{-1}$  demonstrate excellent detector performance. The first years of running, however, also reveal novel challenges and opportunities for reliable and efficient detector operations with machine backgrounds extrapolated to full luminosity. In order to make Belle II more robust and performant at the target luminosity of  $6 \times 10^{35} \text{ cm}^{-2} \text{ s}^{-1}$ , a Belle II upgrade is being planned for a 2027-2028 SuperKEKB shutdown. This talk will cover the full range of proposed upgrade ideas, which include the replacement of select readout electronics, upgrades of detector elements, and the possibility of substituting entire detector sub-systems such as the vertex detector.

## Alternate track

1. Detectors for Future Facilities, R&D, Novel Techniques

## I read the instructions above

Yes

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**Session Classification:** Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors

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