

# Phenomenology 2021 Symposium



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## Dark-sector physics at Belle II

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The Belle II experiment at the asymmetric  $e^+e^-$  collider, SuperKEKB, is a substantial upgrade of the Belle/KEKB experiment. Belle II aims to record  $50 \text{ ab}^{-1}$  of data over the course of the project. During the first physics runs in 2018-2020, around  $100 \text{ fb}^{-1}$  of data were collected. These early data include specifically-designed low-multiplicity triggers which allow a variety of searches for light dark matter and dark-sector mediators in the GeV mass range. This talk will present the very first world-leading physics results from Belle II: searches for the invisible decays of a new vector  $Z'$ , and visible decays of an axion-like particle; as well as the near-term prospects for other dark-sector searches. Many of these searches are competitive with the data already collected or the data expected in the next few years of operation.

### Summary

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