

# Searches for dark sector particles at Belle and Belle II

*Monday 7 July 2025 14:00 (20 minutes)*

The Belle and Belle II experiment have collected samples of  $e^+e^-$  collision data at centre-of-mass energies near the  $\Upsilon(nS)$  resonances. These data have constrained kinematics and low multiplicity, which allow searches for dark sector particles in the mass range from a few MeV to 10 GeV. Using a  $426 \text{ fb}^{-1}$  sample collected by Belle II, we search for inelastic dark matter accompanied by a dark Higgs. Using a  $711 \text{ fb}^{-1}$  sample collected by Belle, we search for  $B \rightarrow h + \text{invisible}$  decays, where  $h$  is a  $\pi$ ,  $K$ ,  $D$ ,  $D_s$  or  $p$ , and  $B \rightarrow Ka$ , where  $a$  is an axion-like particle.

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