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Searches for dark sector particles at Belle and Belle II

Thursday 29 May 2025 15:00 (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 fb^{-1} sample collected by Belle~II, we search for inelastic dark matter accompanied by a dark Higgs. Using a 711 fb^{-1} sample collected by Belle, we search for $B \to h +$ invisible decays, where h is a π, K, D, D_s or p, and $B \to Ka$, where a is an axion-like particle.

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