

B-Factory Constraints on Low-Mass Dark Matter

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While traditional models of WIMP dark matter assume masses in the 100 GeV range which are only accessible to direct production in high-energy colliders, viable and well-motivated models with lighter dark matter components have recently been proposed. Such scenarios typically include relatively low-mass gauge bosons mediating dark matter interactions, and coupling to the Standard Model states through small mixing. Thanks to their large luminosities, B Factories offer an ideal environment to probe these possibilities, complementing underground direct detection searches and cosmic ray experiments. We will describe the most recent searches for dark sector states in BaBar data, and project the future sensitivity that can be achieved by Belle II with 100 times more data.

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