

Abstract Submitted  
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**Belle II sensitivity to missing energy decays** VIPIN GAUR, Virginia Tech, BELLE II COLLABORATION — The Belle II experiment at the SuperKEKB collider is a major upgrade of the KEK “*B* factory” facility in Tsukuba, Japan. The machine is designed for an instantaneous luminosity of  $8 \times 10^{35} \text{ cm}^{-2} \text{ s}^{-1}$ , and the experiment is expected to accumulate a data sample of about  $50 \text{ ab}^{-1}$  in five years of running. With this amount of data, decays sensitive to physics beyond the Standard Model can be studied with unprecedented precision. One promising set of modes are physics processes with missing energy such as  $B^+ \rightarrow \tau^+ \nu$ ,  $B \rightarrow D^{(*)} \tau \nu$ , and  $B \rightarrow K^{(*)} \nu \bar{\nu}$  decays. The Belle II data also allows searches for the dark photon, the gauge mediator of a hypothetical dark sector, which has received much attention in the context of dark matter models.

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