

Abstract Submitted
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Belle II sensitivity to $B \rightarrow K\nu\bar{\nu}$ decays VIPIN GAUR, Virginia Tech, BELLE II COLLABORATION — The $B \rightarrow K^{(*)}\nu\bar{\nu}$ decay provides one of the cleanest experimental probes of the flavor-changing neutral current process $b \rightarrow s\nu\bar{\nu}$, which is sensitive to physics beyond the Standard Model. However, the missing energies of the two neutrinos in the final state makes the measurement challenging and requires full reconstruction of the spectator B meson in $e^+e^- \rightarrow \Upsilon(4S) \rightarrow \bar{B}B$ events. Observation of the $B \rightarrow K^{(*)}\nu\bar{\nu}$ decay will become possible with the large data set to be collected by the upgraded Belle II experiment running at the Super-KEKB accelerator in Japan. A challenge of this analysis will be understanding and suppressing backgrounds. This talk discusses such backgrounds and the expected sensitivity of Belle II for this rare decay.

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