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# Looking for lepton-number-violating processes in $|\Delta L| = 2$ decays of $B_s$ meson and $\Lambda_b$ baryon

Lepton-number violation can be induced by the exchange of an on-shell Majorana neutrino $N$ in rare semileptonic $|\Delta L| = 2$ decays of the $B_s$ meson and $\Lambda_b$ baryon. We investigate the production of such a heavy sterile neutrino through these four-body $\mu^+\mu^+$ channels and explore the sensitivity that can be reached at the LHCb and CMS experiments. For heavy neutrino lifetimes of $\tau_N$ = [1, 100, 1000] ps and integrated luminosities collected of 10 and 50 fb$^{-1}$ at the LHCb and 30, 300, and 3000 fb$^{-1}$ at the CMS, we find a significant sensitivity on branching fractions of the orders $\mathcal{O}(10^{-9} - 10^{-8})$. In the kinematically allowed mass ranges of $m_N$, we exclude regions on the parameter space $(m_N, |V_{\mu N}|^2)$ associated with the heavy neutrino.

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