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Lattice QCD calculation of form factors for $\Lambda_b \rightarrow \Lambda(1520)\ell^+\ell^-$ decays

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Experimental results for mesonic $b \rightarrow s\mu^+\mu^-$ decays show a pattern of deviations from Standard-Model predictions. These deviations could be due to new fundamental physics or due to an insufficient understanding of hadronic effects. Complementary information on the $b \rightarrow s\mu^+\mu^-$ transition can be obtained from Λ_b decays. This was recently done using the process $\Lambda_b \rightarrow \Lambda\mu^+\mu^-$, where the Λ is the lightest strange baryon. A further interesting channel that is being analyzed by LHCb is $\Lambda_b \rightarrow p^+K^-\mu^+\mu^-$, where the p^+K^- final state receives contributions from multiple higher-mass Λ resonances. The narrowest and most prominent of these is the $\Lambda(1520)$, which has $J^P = \frac{3}{2}^-$. We discuss our progress toward a lattice QCD calculation of the relevant $\Lambda_b \rightarrow \Lambda(1520)$ form factors.

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