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$R_{D^{(*)}}$, $R_{K^{(*)}}$ and muon $g-2$ anomalies in RPV supersymmetry and the discovery prospect at LHC

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In R-parity violating supersymmetric scenario, assuming the third-generation superpartners to be the lightest (calling the scenario RPV3), we show that there are some benchmark scenarios in which $R_{D^{(*)}}$ and / or $R_{K^{(*)}}$ and / or $(g-2)_\mu$ anomalies can be addressed and also can be detected at LHC 14 TeV or future 27 TeV hadron collider. We consider $\bar{\ell}\tau\bar{\tau}$ or $\bar{\ell}\mu\bar{\mu}$ for different cases as our final states to be detected at colliders because there is no simple Standard Model (SM) process can have this kind of final state and the background cross-section is thus very small.

Summary

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