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Search for New Physics with rare decays of B and Bs mesons at LHCb (15' +5')

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Rare decays of the B and Bs mesons are sensitive indirect probes of New Physics. In particular, the search for $B(s) \rightarrow \mu^+\mu^-$ decays provides information on the presence of new (pseudo-)scalar particles, while the angular analysis of decays like $B \rightarrow K^*\mu^+\mu^-$ provides information on possible new vector-axial contributions. Furthermore radiative decays like $B_s \rightarrow \Phi\gamma$ provide valuable information of New Physics modifying the photon polarization. LHCb is well suited for these analyses due to its large acceptance and trigger efficiency, as well as its excellent invariant mass resolution and particle identification capabilities. The status of these analyses with $\sim 37 \text{ pb}^{-1}$ of pp collisions collected by LHCb in 2010 at $\sqrt{s} = 7 \text{ TeV}$ is reviewed.

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