

Studies of the electroweak penguin transitions and radiative B decays at LHCb

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Rare $b \rightarrow s\mu^+\mu^-$ transitions that proceed via flavour changing neutral currents are suppressed in the SM and provide a sensitive probe of new physics contributions entering in competing diagrams. The dataset collected with the LHCb experiment has enabled measurements to be made in decays such as $B \rightarrow K0\mu^+\mu^-$, $B^+ \rightarrow K^+\mu^+\mu^-$ and $B_s \rightarrow \phi\mu^+\mu^-$. *Particularly interesting are the angular and isospin asymmetries in the decay $B \rightarrow K(0)\mu^+\mu^-$* , which are sensitive probes of new physics. The large statistics of reconstructed B mesons allow, for the first time, experimental access to $b \rightarrow d\mu^+\mu^-$ transitions, such as $B^+ \rightarrow \pi^+\mu^+\mu^-$, which are further suppressed in the SM. Radiative B decays are also sensitive probes of New Physics. We present the latest results on these decays from the LHCb experiment. Results include first measurements of new decay modes and studies that are sensitive to physics beyond the Standard Model that may affect the polarisation of the emitted photon in radiative B decays.

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