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Studies of the electroweak penguin transitions $b \rightarrow s\mu\mu$ and $b \rightarrow d\mu\mu$ 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 $B \rightarrow K^0\mu^+\mu^-$, $B^+ \rightarrow K^+\mu^+\mu^-$ 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. The latest results on these decay modes will be presented.

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