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Searches for very rare decays to purely leptonic final states at LHCb

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We present a review of the searches for very rare decays to muon final states performed at LHCb using 1.0 fb–1 of pp collisions at 7 TeV centre of mass energy. Flavour changing neutral current processes, such as B0s -> μ+ μ–are highly suppressed in the Standard Model (SM). Such decays therefore allow the contributions from new processes or new heavy particles to significantly modify the expected SM rates. Charged lepton flavour violating processes (LFV), such as the neutrinoless τ+ -> μ+ μ–μ+ decay, have vanishingly small decay rates in the SM, but can be significantly enhanced in extended models. We report the latest results on these channels from the LHCb dataset.

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