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## Rare leptonic and semileptonic b-hadron decays and Tests of Lepton Flavour Universality at LHCb (10' + 5')

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Rare leptonic and semileptonic decays of B, D and K mesons provide sensitive indirect probes of effects beyond the Standard Model (SM). In the SM, these decays are forbidden at tree level and are therefore suppressed. In particular, the  $b \rightarrow s \ell \ell$  processes give access to many observables where effects of New Physics can be observed. Recent results on these searches will be presented. Moreover the possibility to measure new theoretically clean observables, such as the  $B_s \rightarrow \mu\mu$  effective lifetime, will be also shown.

In addition we discuss LHCb results concerning tests of lepton flavour universality: the SM predicts, with small uncertainties, the ratios of branching fractions of rare decays involving different lepton flavours to be unity up to lepton mass corrections. The universality of lepton couplings has been tested using the LHCb Run 1 dataset using  $B^0 \rightarrow K^{(*)} \ell^+ \ell^-$  decays. The most recent results will be presented.

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