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Search for Charged Lepton Flavour Violation at LHCb

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Charged Lepton Flavour Violation (cLFV) is only permitted in the Standard Model of Particle Physics through the oscillation of a neutrino, and hence has branching fractions of the order 10^{-54}, well below the reach of current experiments. Therefore, searches for cLFV have direct sensitivity to new physics models that would enhance the production of such modes, where any observation provides clear evidence for physics beyond the Standard Model. This analysis, using the $B^{\pm} \to \pi^{\pm}\mu^{\pm}e^{\mp}$ decay channel, is the first search for cLFV in the $b \to d\ell^{\pm}\ell'^{\mp}$ quark transition at the LHC. In the absence of a signal observation, the world's best upper limit on it's branching fraction will be set. This talk will present the analysis strategy, current status and the expected sensitivity for this search at LHCb.

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