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【334】 Search for the lepton-flavour-violating decay

$$B^+ \rightarrow K^+ \tau^\pm \mu^\mp$$

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Using data from the LHCb experiment at CERN, a search for the lepton-flavour-violating decay $B^+ \rightarrow K^+ \tau^\pm \mu^\mp$ is being performed. This decay is forbidden in the standard model (SM) of particle physics because it violates the lepton-flavour conservation. However, it is known that the SM cannot account for dark matter, dark energy, the strong CP problem, the neutrino masses, etc. In particular, this decay is interesting since there is emerging evidence for lepton-flavour non-universality, which can be linked to lepton-flavour violation via the introduction of leptoquarks.

In this talk, I will discuss selected aspects of an analysis designed to search for $B^+ \rightarrow K^+ \tau^\pm \mu^\mp$ decays using three-prong τ decays.

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