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Flavour studies at FCC-ee

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A possible long-term strategy for high-energy physics at colliders considers a tunnel of about 100 km circumference, which takes advantage of the present CERN accelerator complex. A possible first step of the project is high-luminosity e^+e^- collider aimed at studying comprehensively the electroweak scale with centre-of-mass energies ranging from the Z pole up to and beyond the $t\bar{t}$ production threshold. A 100 TeV pp collider is considered as the ultimate goal of the project. The unprecedented statistics at the Z pole ($O(10^{12-13})$ Z decays potentially delivered by the e^+e^- collider can be studied in particular to explore further the Flavour physics case at large. The possible measurements of rare decays of b-hadrons, which can complement the anticipated knowledge from the foreseen b-physics programs, will be discussed. These data can be used as well to study lepton-flavour-violating Z decays, which would serve as an indisputable evidence for new physics if seen. The constraints to be set on models embedding additional right-handed sterile neutrinos are discussed. Heavy sterile neutrinos, addressing in some models both the questions of dark matter and baryonic asymmetry in the Universe, can also be searched for directly at FCC-ee. Prospects for such direct searches are described.

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