

Flavour and tau physics at FCC-ee

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The unparalleled production of beauty and charm hadrons and tau's in the $6 \cdot 10^{12}$ Z boson decays expected at FCC-ee offers outstanding opportunities in flavour physics. A wide range of measurements will be possible in heavy-flavour spectroscopy, rare decays and CP violation, benefitting from a low-background environment, initial-state energy-momentum constraints, high Lorentz boost, and availability of the full hadron spectrum. The huge data sample offers also improved determinations of tau properties (lifetime, leptonic/hadronic widths, mass) allowing for key tests of lepton universality. Via the measurement of the tau polarisation, the partial width and forward-backward asymmetries of heavy quarks, FCC-ee can precisely determine the neutral-current couplings of e^\pm , taus and heavy quarks. Such measurements present strong challenges to match the $O(10^{-5})$ stat uncertainties, raising strict detector requirements and novel experimental methods to limit systematic effects.

Alternate track

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