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Measurement of hadronic Higgs boson decays at FCC-ee to constrain quarks and gluon couplings

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We report on the latest sensitivity studies of FCC-ee to the measurement of the branching ratios of Higgs boson decays to quark-antiquark pairs and gluons.

The studies use simulated events scaled to integrated luminosities of 10.8/ab of $\sqrt{s}=240$ GeV and 3.0/ab of $\sqrt{s}=365$ GeV.

Jet flavour tagging is exploited to distinguish among different Higgs boson decays.

Various final states ($H(jj) + ee/\mu\mu$, $H(jj) + jj$ and $H(jj) + \text{missing energy}$) are reconstructed and a joint interpretation of their results is performed.

The expected precision in the branching ratios of decays to b,c,g is at the %-level or better, while that for the $H \rightarrow ss$ decay is close to the predicted branching ratio in the Standard Model.

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