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Top quark and electroweak physics at the FCC-hh

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The future circular hadron-hadron collider FCC-hh is expected to produce collisions at the unrivaled center of mass energy of sqrt(s) = 100 TeV and to deliver an integrated luminosity of few tens of ab-1. As a result, trillions of top quarks and electroweak gauge bosons will be produced. Having at disposal such humongous samples opens a wide range of possibilities in the realm of electroweak and standard model precision measurements. Final states involving top quarks and heavy gauge bosons can for instance be studied in highly boosted kinematical regimes where the electroweak symmetry is effectively restored. In addition, in such regimes, otherwise non-accessible high dimension operators can be strongly constrained since their contribution can receive substantial enhancements. Large statistics offer the possibility of studying very rare decays, including those that are sensitive to CP-violation. Finally, percent level precision on the top Yukawa coupling can be reached at the FCC-hh.

Experimental Collaboration

FCC-hh

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