Top FCNC at FCC-hh

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Abstract

After a very short introduction to top quark physics, we present the results on tqγ and tqg couplings through the processes pp->t+γ and pp->t+jet, respectively. The production Wbγ includes both signal and interfering background. Cross sections depending on FCNC couplings have been calculated at FCC-hh. We generate the events with MadGraph5 + Pythia8 and perform fast simulation with Delphes 3.4 to obtain the kinematical distributions. We apply event selection (jets, electron or muon, MET and photon), here the final state W+bjet+photon taken as the main background. Estimations have been given for the FCNC couplings that can be probed down to $\lambda_{q\gamma}=10^{-3}$ and $\zeta_{qg}=10^{-4}$ at FC-hh with an initial integrated luminosity of 100 fb^(-1).

Key words: Top quark, FCNC, FCC-hh