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Higgs Physics at CLIC

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The Compact Linear Collider (CLIC) is an attractive option for a future multi-TeV linear electron-positron collider, offering the potential for a rich precision physics programme, combined with sensitivity to a wide range of new phenomena. The physics reach of CLIC has been studied in the context of three distinct centre-of-mass energy stages, 350 GeV, 1.4 TeV and 3.0 TeV. This staged scenario provides the ideal environment for precise studies of the properties of the ~ 125 GeV Higgs boson. Operation at 350 GeV allows the couplings and width of the Higgs boson to be determined in a model-independent manner through the study of the Higgs-strahlung and WW-fusion processes. Operation at higher centre-of-mass energies provides high statistics for even more precise measurements and the potential to study the top Yukawa coupling and even the Higgs boson self-coupling. In this talk we explore the potential of the CLIC Higgs physics programme, based on full simulation studies of a wide range of final states. The evolution of the physics sensitivity with centre-of-mass energy is presented in terms of model-independent coupling fits and the constrained kappa fits employed at the LHC.

Summary

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