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Higgs and BSM physics at CLIC

Friday, July 7, 2017 2:45 PM (15 minutes)

The Compact Linear Collider (CLIC) is an option for a future electron-positron collider operating at centre-of-mass energies from a few hundred GeV up to 3 TeV. This contribution discusses the Higgs and BSM physics reach of CLIC operating in several energy stages. The presented results are based on physics benchmark analyses using full detector simulations, several of which have been completed recently. The initial stage of operation near the top quark pair production threshold allows to study Higgs boson production in the Higgsstrahlung and WW-fusion processes, resulting in model-independent determinations of the Higgs couplings. High-energy operation, here assumed at 1.4 and 3 TeV, gives access to rarer Higgs decays and production processes such as double Higgs production, which is sensitive to the Higgs self-coupling. In the second part of the presentation, examples for direct and indirect new physics searches are given. In both cases, the achievable sensitivities generally rise with the centre-of-mass energy.

Experimental Collaboration

CLICdp

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