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Alps 2019

Talks

News on the CLIC physics potential

- Speaker: Filip Zarnecki
- Status: Accepted
- Abstract: The Compact Linear Collider (CLIC) is a proposed TeV -scale high-luminosity electron-positron collider. For an optimal exploitation of its physics potential, CLIC is foreseen to be built and operated in three stages, with centre-of-mass energies ranging from 380 GeV up to 3 TeV. Electron beam polarisation is provided at all energies. The initial energy stage will focus on precision measurements of Higgs-boson and top-quark properties. The subsequent energy stages enhance the reach of many direct and indirect searches for new physics Beyond Standard Model and give access to the Higgs self-coupling. Higgs and top-quark projections have been evaluated using full detector simulation studies. Many new phenomenology studies have been undertaken to explore the BSM reach of CLIC, from EFT interpretations of precision measurements through to signature-based searches; these include flavour dynamics, and dark matter and heavy neutrino searches. This talk will review some of the latest results that demonstrate the outstanding potential of CLIC in many physics domains.
- Slides

CLIC sensitivity to measure $\sigma(\text{H}\nu\nu) \times \text{BR}(\text{H} \rightarrow \dots)$ at 3 centre-of-mass energy

- Speaker: Goran Kacarevic
- Status: Accepted
- Abstract: In this talk we address expected measurement accuracy of the Standard Model Higgs boson decay into two photons at 3 TeV Compact Linear Collider (CLIC). This process is induced via loop exchange of heavy particles either from the Standard Model (SM) or beyond, modifying the SM expectations in the latter case. The study is performed using a full simulation of the CLIC_ILD detector model, considering all relevant physics and beam-induced processes in the full reconstruction chain. It has been shown that the Higgs production cross-section in WW-fusion times branching ratio $\sigma(\text{H} \rightarrow \dots)$ can be measured with a relative statistical accuracy of 7.5 %, assuming an integrated luminosity of 5 ab⁻¹ and 80% of the data being collected with -80% electron-beam polarization and 20% of the data with +80% electron-beam polarization.
- Slides

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