

Table of Contents

Lake Louise Winter Institute 2017 Abstracts.....	1
News on the CLIC physics potential.....	1

Abstracts

News on the CLIC physics potential

- Speaker: Marko Petric (CERN)
- Abstract: The Compact Linear Collider (CLIC) is a multi-TeV high-luminosity linear e+e- collider under development. For an optimal exploitation of its physics potential, CLIC is foreseen to be built and operated in a staged approach with three centre-of-mass energy stages ranging from a few hundred GeV up to 3 TeV. The first stage will focus on precision Standard Model physics, in particular Higgs and top-quark measurements. Subsequent stages will focus on measurements of rare Higgs processes, as well as searches for new physics processes and precision measurements of new states, e.g. states previously discovered at LHC or at CLIC itself. The talk will present the recently updated CLIC baseline-staging scenario [1] that focuses on an optimised initial-energy stage at 380 GeV. This initial stage can both address a rich Higgs physics and top physics programme while it will be significantly cheaper than the original design. Furthermore this talk will present in detail the Higgs physics reach of CLIC operating in three energy stages as recently summarised in a comprehensive CLIC Higgs publication [2] covering 25 independent full detector simulations studies at CLIC. Detailed studies of the precision achievable with Higgs measurements at CLIC will be shown as well as the interpretation of these measurements in a global fit.
- [1] CLIC and CLICdp Collaborations 2016 arXiv:1608.07537
- [2] H Abramowicz et al. 2016 arXiv:1608.07538
- Slides

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