Detectors at CLIC Philipp Roloff (CERN)

The presentation describes the ongoing detector studies for a future TeV-scale Compact Linear Collider (CLIC). All results were obtained for the CLIC Conceptual Design Report.

A short overview will be given of the physics potential of a high-energy e+e- collider. The experimental conditions at a 3 TeV CLIC machine and the resulting requirements for the detectors will be shown in detail. Two detector concepts are currently under study for CLIC, which were derived from the ILD and SiD designs for the 500 GeV International Linear Collider. The specific detector challenges at CLIC include an ultra-thin vertex detector with high resolution and fast time-stamping, and hadronic calorimetry using dense absorbers. The performances of TPC-based and all-silicon tracking systems will be presented. Event reconstruction techniques related to particle-flow analysis and beam background suppression will be discussed.