Contribution ID: **1328** Type: **Parallel Talk**

The CLIC and ILC accelerator status and plans

Thursday, 7 July 2022 11:15 (20 minutes)

The Compact Linear Collider (CLIC) collaboration has presented a project implementation plan for construction of a 380 GeV e+e- linear collider 'Higgs and top factory' for the era beyond HL-LHC, that is also upgradable in stages to 3 TeV. The CLIC concept is based on high-gradient normal-conducting accelerating structures operating at X-band (12 GHz) frequency. Towards the next European Strategy Update a Project Readiness Report will be prepared, and the main studies towards this report will be presented.

We present the CLIC accelerator concept and the latest status of the project design and performance goals. Updated studies of the luminosity performance has allowed to consider increased luminosity for the 380 GeV stage. Studies are ongoing for further improvements.

We report on high-power tests of X-band structures using test facilities across the collaboration, as well as CLIC system verification studies and the technical development of key components of the accelerator. Key elements are the X-band components, and accelerator components important for nano beam performances.

We also present developments for application of the X-band technology to more compact accelerators for numerous applications, e.g. as X-ray FELs and in medicine. A rapidly increasing number of installations are taking the technology in use and provide important design, testing and verification opportunities, and motivate industrial developments.

Finally, the many efforts to make CLIC a sustainable and minimal power and energy consuming accelerator will be described. Design optimisation, RF power efficiency improvements and low power component development will provide a 380 GeV installation operating at around 50% of CERN's energy consumption today.

In-person participation

Yes

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Session Classification: Accelerators: Physics, Performance, and R&D for future facilities

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