

An 3-15 GeV electron beam facility at CERN for particle physics and accelerator R&D

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CERN today operates a small ~200 MeV electron test-facility for accelerator R&D (CLEAR). This facility was put into operation in 2017 and a number of R&D activities were started. The results for accelerator R&D at the CLEAR facility will be reviewed including the plans for 2018-20.

Longer term and in the framework of the Beyond Collider Physics studies at CERN at 3.5 GeV electron linac is proposed. This linac will be used at injector to the SPS where the electron beam can be accelerated to around 15 GeV. This presentation will cover the studies for the 3.5 GeV linac and re-introduction of an electron beam in the SPS.

The potential of such beams for particle physics studies (e.g. Light Dark Matter Searches) and accelerator R&D will be reviewed. The accelerator R&D possibilities cover linear collider studies, general accelerator component R&D (impedance studies, instrumentation, electron guns), novel accelerator technology and more.

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