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The CTF3 facility: a unique place for testing future accelerators concepts.

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Since 2008, the Compact Linear Collider (CLIC) project is running a test facility called CTF3 where the two-beam acceleration principle has been successfully validated. This facility is composed of a Drive Beam Linac of 3.5 Amps, a delay loop and a combiner ring where the electron bunches are interleaved by a factor 8 up to 28 Amps and an experimental room (CLEX) where the beam energy is converted in RF power at 12 GHz. Inside the CLEX a second accelerator produces a probe beam used for testing the performances of the high gradient accelerating structures powered by the Drive beam generated RF.

Many experiments have been conducted in the CTF3 facility, including accelerating gradient of 100 MV/m, breakdown analysis, beam characteristics after acceleration and test of several innovative beam diagnostics. After 2016 and the end of the CTF3 program, there are plans to continue using the facility, with possible enhancement works, to test advanced accelerator concepts like beam-driven plasma accelerators.

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