Contribution ID: **4** Type: **not specified**

# The CLICpix Timepix3 telescope

*Wednesday 3 February 2016 09:30 (20 minutes)*

The vertex- and tracking detectors at the proposed high-energy CLIC electron-positron collider will be based on small-pitch silicon pixel- or strip detectors. Time stamping with an accuracy of approximately 10 ns is required to suppress hits from beam-induced backgrounds. Tests with particle beams are needed to assess the performance of existing and future prototype assemblies. To this end a high-resolution beam telescope based on Timepix3 hybrid pixel-detector assemblies has been constructed and successfully commissioned in the H6 beam line of the CERN SPS. It allows for track reconstruction at high particle rates (data driven readout with up to 10 million tracks / second) and with excellent spatial (~2 microns) and temporal (~1 ns) resolution. The readout system follows the LHCb Timepix3 telescope architecture based on SPIDR boards and Xilinx Virtex-7 FPGAs. We present the telescope hardware and its readout architecture, as well as the concept for integration of devices under test based on EUDAQ producers. First telescope commissioning results will also be shown.

**Primary author:** Dr FIERGOLSKI, Adrian (CERN)

**Presenter:** Dr FIERGOLSKI, Adrian (CERN)

**Session Classification:** Beam telescopes