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First results of CW diagnostics for future accelerator

Wednesday 3 December 2025 14:00 (15 minutes)

Continuous Wave (CW) mode is becoming increasingly relevant for FELs, in contrast to a pulsed operation mode as it is currently done at the EuXFEL accelerator.
This transition requires a new approach to timing and data readout concepts. One potential solution involves using double-buffered memory in the firmware, with buffer swapping controlled by a timing system trigger. Initial developments using this approach have been carried out with a laser pulse energy measurement setup at the KALDERA facility at DESY.
The implementation is based on Struck SIS8300-KU ADC hardware, the DESY Firmware Framework, and ChimeraTK software. Integration with the DOOCS control system via the DOOCSDeviceAccess library will be presented.

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