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## SP5: KALYPSO - a Mfps linear array detector for visible to NIR radiation

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The acquisition rate of commercially available line array detectors is a bottleneck for beam diagnostics at high-repetition rate machines like synchrotron lightsources or FELs with a quasi-continuous or macro-pulse operation. In order to remove this bottleneck we have developed KALYPSO, an ultra-fast linear array detector operating at a frame-rate of up to 2.7 Mfps.

The detector mounts InGaAs or Si linear array sensors to measure radiation in the near-infrared or visible spectrum. The FPGA-based read-out card is connected to the external data acquisition system through a high-performance PCI-Express 3.0 data-link, allowing continuous data taking and real-time data analysis. The detector is fully synchronized with the timing system of the accelerator and other diagnostic instruments.

The detector is currently installed at several accelerators: ANKA, the European XFEL and TELBE. We present the detector and the results obtained with Electro-Optical Spectral Decoding (EOSD) setups.

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