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Eiger, a fast framing, large area pixel detector for X-ray applications

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Eiger is a single-photon counting X-ray pixel detector being developed at the Paul Scherrer Institut for applications at synchrotron light sources. It follows the widely utilized and successful Pilatus detector. The major advantages over the Pilatus system are the smaller pixel size (75 μm), higher frame rate capability (22 kHz) and negligible readout dead time (4 μs). These enhanced features will directly benefit many fields at synchrotron sources, especially research in the fields of Protein Crystallography, Small Angle X-ray Scattering, Coherent Diffraction Imaging and X-ray Photon Correlation Spectroscopy. The presentation will cover the details of the Eiger and our progress towards large area detector systems. Measurements that characterize the detector like the energy range, rate capabilities, threshold dispersion and radiation tolerance will also be addressed. In conclusion, highlights from experiments will be reported.

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