

Electronics for the European XFEL: AGIPD a high frame rate camera

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The European free electron laser (EuXFEL) facility will generate coherent and intense X-ray flashes at rates up to 27000 per second. X-rays flashes are generated by passing bunches of electrons, accelerated to 17.5GeV by a superconducting linear accelerator, through magnetic undulators in which electrons emit X-ray flashes by a SASE lasing process. Each flash is intense enough to produce a full diffractive picture of scattering targets, such as biological molecules, which, when reconstructed, will allow new insights into material structure and dynamics. Dedicated two dimensional area camera systems, e.g. AGIPD, are being developed to record up to 5000 images/second with a resolution of 1Mega-Pixel and a dynamic range of 0 –10⁴ photons/pixel. This talk will present the accelerator and detectors techniques used and will emphasize the electronics developments being made.

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