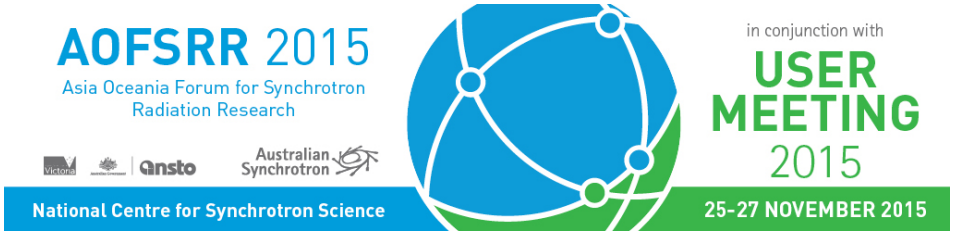

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24h with a pixel detector - assessment of a Dectris 1M EIGER unit on loan to MX2

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The EIGER series of hybrid photon detectors constitute an interesting alternative to the more established Pilatus technology. As a means to assess their potential, Dectris kindly lent the Australian Synchrotron their smallest unit for a short period, to be tested at a range of beamlines. The EIGER has a range of properties suitable for deployment at an MX beamline such as kilohertz frame rate; no read-out noise; very low point-spread function; and continuous readout with 3 μs dead-time. Here we present the findings of working with this detector during a 24 hour window on MX2. Preliminary data suggest that the unit is suitable for high frame-rate, fine-sliced, shutterless data collection for PX and CX with a merging R-factor on par with our current setup. With a temporary and unoptimized installation, our insulin test crystals could be solved by trivial molecular replacement from data collected at 13 keV at 10 Hz to 200 Hz using 200 degrees oscillation keeping the dose constant. At 8 keV, 200 degrees of data was enough for S-SAD phasing. Overall impressions are positive, and any concerns that a pixel detector can be installed and commissioned on MX2 in a timely manner have been allayed.

Keywords

Crystallography, diffraction, instrument, detector

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