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MAX3D: Routine Reciprocal Space Mapping

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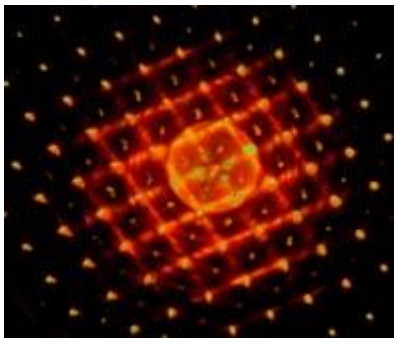
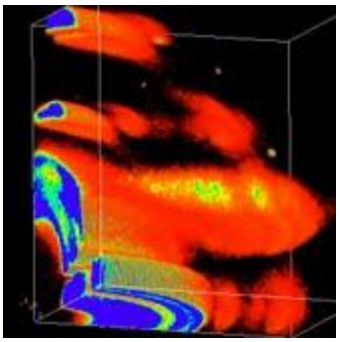
Tuesday 28 August, 2012
11am – 12noon
National Centre for Synchrotron Science Lecture Theatre,
at the Australian Synchrotron
800 Blackburn Road, Clayton

Abstract

When we use an area detector to collect diffraction data for *single crystal* structure analysis or *polycrystalline solid* or *film* texture analysis we rotate the sample around the φ or ω diffractometer axis and store the 3D pattern as distorted slices of reciprocal space. MAX3D is a visualization program which allows us to compile and view the data as a single object – a 3D plot of intensity vs. radial 2θ. Seeing the full diffraction pattern allows us to better determine crystal or film quality, identify weak super-lattice reflections or twinning, observe the details of diffuse or incommensurate scattering, monitor phase changes, enhance student understanding, etc. A variety of examples will be presented.





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