s7.m6.o5 **Thermal Neutron Laue Diffraction Using the Diffractometer LADI at the ILL.** J.A. Cowan[1], G.J. McIntyre[1], C. Wilkinson[1], D.D.A. Myles[2], J.A.K. Howard[3]
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Laue diffraction[1] is the use of a multi-wavelength white beam and a stationary crystal. A large area detector combined with a broad wavelength band, enable many reflections to be collected at once. This technique is excellently suited to neutron diffraction experiments, in which the flux is low and the time is never enough. The problems with the Laue method include wavelength normalisation and a high background.

We present examples of crystal structures refined from data collected on the instrument LADI at the ILL during tests on a thermal beam. LADI is intended for protein crystallography, and works on a cold beam. It is a cylindrical detector, coated with neutron sensitive image plates. The combination of the white beam and large solid angle means a huge amount of reciprocal space can be seen at once. A new Laue diffractometer will be built, and optimised, for problems in physics and chemistry, and work on a thermal beam. This will result in an extremely versatile diffractometer, able to perform a wide variety of experiments quickly, and easily.

The results are compared with results from similar experiments on conventional monochromatic neutron diffractometers. The results have lower accuracy, which is expected, but were obtained in much shorter times. Often a reduction in accuracy is acceptable, for instance in finding hydrogen atoms, as long as the question is answered.

Notes

[1] Friedrich, Knipping, Laue.(1912) Sitzb. Bayer. Akad. Wiss., Math-Physik. Klasse, **303** 363.