"Magnetic Structure Determination From Neutron Powder Diffraction Data Workshop", November 2005 at The Cosener's House (Abingdon).

Sponsored by the Physical Crystallography Group and by CCLRC

Following the success of a similar event held in December 2002, this workshop was aimed at providing the essential theoretical foundations and some working experience on solving and refining magnetic structures from neutron powder diffraction data. Compared to its first edition, the present workshop reached an unexpected international scope, with about 50% of the 34 attendees coming from outside the UK. A much awaited event, indeed! Lingfei Zhang from the Materials Science group of the University of Salford commented: *"I have been waiting for 2 years! […] this workshop gave me unique chance to interact with the most specialised experts in the field otherwise the mystery of magnetic powder diffraction refinement will never end up to me"*. The teachers/tutors that had made the 2002 workshop a success (Juan Rodriguez Carvajal – LLB, Paolo G. Radaelli – ISIS and Andrew Wills – UCL) gathered once again at Cosener's house, this time effectively "complemented" (guess who did all the hard work!) by myself and Laurent Chapon (ISIS).

The objectives of the workshop were quite ambitious: the task of solving and refining magnetic structures from neutron powder diffraction data, in the words of Michael Banks from Max Planck Institute, Stuttgart is *"difficult to get right to teach in a few days, I think the organisers did the best possible job"*. The first half day was devoted to lectures on the experimental techniques. During the second day, a special emphasis was placed on the essential theoretical foundations, with a series of lectures dedicated to the use of symmetry, as well as on the description solution and refinement of magnetic structures. The last morning was a practical session which was dedicated to get the hands on the most popular computer programs that are used in the field. This session was a deliberate compromise, dictated by the diversity of the attendee's background, which was ranging from PhD students to confirmed researchers, from crystal chemists and solid state scientists working in conventional laboratory environments, to experienced neutron scatters from ISIS facility and other European neutron sources.

Overall, the feedback received from the participants is excellent: *"Great course, many thanks for all the effort put in. For next time, perhaps recommend some reading to participants to do before they arrive"* (Nicola Wilson, PhD student from Warwick University). *"I learned and understand a lot, and well, surely not everything ;-). But in this case I have the great handbook you provided us for further reading. I enjoyed everything very much, besides the topic also the surrounding and accommodation. Also you were very patient in explaining all the things during the practice lessons and answer our questions."* (Michael Tovar, Post Doc at the HMI neutron source, Berlin). A general lesson for the future is that the workshop in general, and the hands-on session in particular, was just too short. People ask for more, and extending the workshop by 1-2 days sounds to us as a promising improvement, for next time!

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More at **http://www.isis.rl.ac.uk/conferences/MagnetismCoseners05/**