Experiment title:
The Pr \( L \)-edge resonances in Nd/Pr superlattices

Experiment number:
28-01-090

Date of experiment:
from: 13/9/00  
to: 19/9/00

Date of report:
18/6/02

Beamline: BM 28

Shifts: 18

Local contact(s):
Anne Stunault

Names and affiliations of applicants (* indicates experimentalists):

Pascale Deen  
Department of Physics, University of Liverpool

Jon Goff  
Department of Physics, University of Liverpool

Report:

"The anomalous lineshape at \( L \) edge resonances of Nd/Pr superlattices"

P. P. Deen, J. P. Goff, R. C. C. Ward, M. R. Wells and A. Stunault,


Abstract:

X-ray magnetic resonant scattering studies of Nd/Pr superlattices have allowed the magnetic ordering of both constituents of the superlattice to be studied separately. However, the resonances at he \( L \) edges were found to be anomalous, and the aim of the experiment was to understand the lineshape of these energy dependencies. The dominant features, a large peak at the absorption edge and a high-energy shoulder, were found to be due to a dipolar transition to a broad \( 5d \) band.