

Jül-Conf-45

B1

I C A N S - V
MEETING OF THE INTERNATIONAL COLLABORATION ON
ADVANCED NEUTRON SOURCES

June 22-26, 1981

Neutron Scattering at an Intensity Modulated Neutron Source

R. Scherm

Physikalisch-Technische Bundesanstalt

D-3300 Braunschweig, Bundesallee 100

Abstract

The performance of an intensity modulated neutron source like the SNQ with respect to any particular neutron scattering experiment depends on the peak neutron flux and on the fraction of time during which useful information is collected by the detector. In this respect we can distinguish different classes of instruments. Steady state-type instruments like diffractometers and triple axes machines utilize essentially the time average flux only, but can profit from the time structure by gating the detector against background and higher order monochromator reflections. Time of flight instruments use the peak neutron flux. A third class of instruments, most of which will be newly developed or will be suitable modifications of existing ones, will operate quasi-continuously on a varying neutron wavelength and thus effectively see the peak flux over a long period of time (say 50% duty cycle).