

W0132

X-rays and Neutrons for the Study of DNA Structure, Hydration, and Transitions. I.M. Parrot^{1,2}, V. Laux¹, V. Urban³, M. Haertlein¹, V.T. Forsyth^{1,2}, ¹Inst. Laue Langevin, Grenoble, France, ²Keele Univ., UK, ³Oak Ridge National Laboratory, Tennessee, USA.

X-ray and neutron fibre diffraction methods provide powerful probes of polymer structure when used in a genuinely complementary way. While the high flux of modern synchrotron radiation sources allow high quality datasets to be recorded at high resolution within a very short space of time, neutron studies can provide unique information through the ability to locate water or hydrogen atoms that are often invisible using x-ray methods. Furthermore, neutron fibre diffraction methods can, through the ability to selectively label specific parts of a structure, be used to highlight novel aspects of polymer structure that can not be studied using x-rays.

A number of specific examples illustrating these issues will be described.