

Protein Crystallography with Spallation Neutrons

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The Protein Crystallography Station (PCS) at the Los Alamos Neutron Scattering Center, is a high performance neutron protein crystallography beam line.[1] Beam time is free and is allocated by a peer review process.

The beam line exploits the pulsed nature of spallation neutrons with a large position sensitive electronic neutron detector that allows time resolved collection of Laue patterns. The data collected uses neutrons with wavelength of 0.7 to 6 Angstroms. The neutron optics employs a partially decoupled moderator with a conical beam line, collection all useful neutrons from the whole moderator surface with a beam divergence matched to the average mosaic of typical protein crystals. [2]

Some typical results from the user program will be presented illustrating data collected for protein crystals with molecular weights from a few kD to over 500kD.

[1] Langan P., Greene G., Schoenborn B.P., *J. App. Cryst.*, 2004, **37**, 24. [2] Benno P. Schoenborn, John D. Court, Allen C. Larson, Phil Ferguson, *J. of Neutron Research*, 1999, **7**, 89-106.

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