



Contribution ID: 38

Type: **Oral Presentation**

Developing position sensitive polarization analysis method for time-of-flight neutron

Tuesday, 15 October 2019 14:30 (25 minutes)

Polarized neutron analysis has been widely applied to position sensitive experiment method, such as small angle neutron scattering

1. T. Wang, C. Y. Jiang, T. O. Farmer, L. Debeer-Schmitt, J. F. Wenzel, L. McDonald, J. L. Robertson, M. R. Fitzsimmons, and X. Tong, *Physica B* 551, 492 (2018).

(SANS), neutron imaging

1. I. Dhiman, R. Ziesche, T. H. Wang, H. Bilheux, L. Santodonato, X. Tong, C. Y. Jiang, I. Manke, W. Treimer, T. Chatterji, and N. Kardjilov, *Rev Sci Instrum* 88 (9) (2017).

and neutron reflectometry

1. X. Tong, C. Y. Jiang, V. Lauter, H. Ambaye, D. Brown, L. Crow, T. R. Gentile, R. Goyette, W. T. Lee, A. Parizzi, and J. L. Robertson, *Rev Sci Instrum* 83 (7) (2012).

. However, current applications either limit the energy analysis to single wavelength or forgo complex neutron polarization manipulation. In this talk, we present our plan and effort to develop an integrated polarized neutron beamline that combines complex neutron polarization manipulation with time-of-flight neutron. The proposed beamline shall take advantage of the wavelength resolving nature of time-flight-neutron to better analysis the evolution of neutron polarization under external magnetic field, distinguishing neutron polarization shift caused by precession, depolarization and wavelength dispersion. The talk will introduce theoretical concept of the proposed beamline and set up as well as the development of such configuration on BL-20 at the China Spallation Neutron Source.

Primary author: WANG, Tianhao (China Spallation Neutron Source)

Co-authors: Dr XIN, Tong (China Spallation Neutron Source); BUCK, Zachary (China Spallation Neutron Source)

Presenter: WANG, Tianhao (China Spallation Neutron Source)

Session Classification: Instruments

Track Classification: Instrument