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BENEFITS AND CHALLENGES OF USING ENERGY SELECTIVE NEUTRON IMAGING AT TIME OF FLIGHT AND REACTOR SOURCES

Monday 7 April 2014 16:00 (30 minutes)

The presentation will outline highlights and challenges based on our personal experiences in using energy selective neutron imaging at reactor sources and spallation sources. Rather than “just” showing exciting results possible from energy selective neutron imaging and scattering for identifying phase, texture, strain, and microstructure, we will focus on an active discussion regarding:

- Experimental setup
- Data collection
- Data analysis and reconstruction

From an engineering and materials science perspective, we will outline which applications appear to be useful to be implemented at reactor sources vs. spallation sources. While analysis from data collected at reactor sources is mostly straight-forward, the data from spallation sources at the present time offers unique challenges and will be addressed during our talk.

The research results to be discussed at the workshop has been performed in collaboration with the Helmholtz Zentrum Berlin (N. Kardjlov, A. Hilger, I. Manke, M. Boin), the University of Berkely (A. Tremsin), Rutherford Appleton Laboratory (J. Kelleher, W. Kockelmann), the Los Alamos Neutron Science Center (B. Clausen, S. Vogel), NIST (D. Hussey, D. Jacobson), the ESRF (W. Ludiwg, P. Reischig), and the Oak Ridge National Laboratory (A. Pyzant, C. Hubbard).

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