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**A multi-purpose robotic sample changer for texture and powder measurements on the HIPPO neutron diffractometer** ADRIAN LOSKO, New Mexico State University, SVEN VOGEL, Los Alamos National Laboratory — Automation of sample changes is essential on neutron diffractometers with short count times per sample (as little as 1min for steel samples), such as the high pressure preferred orientation (HIPPO) instrument at the Los Alamos Neutron Science Center (LANSCE), to allow for a high sample throughput. Efficient use of available neutron flux is indispensable and reduces the instrument downtime and workload of beamline personnel. High precision motion in cartesian coordinates permits accurate sample alignment and increased coverage of sample directions for texture measurements. Using geometrical properties of diffraction by crystals, corrections in sample displacements in strain measurements will minimize the artificial strain due to misalignment of the sample position to determine the center of “gravity” of the diffraction signal by utilizing a sample rotation that will ensure that the same grain population will diffract in two different detectors, allowing to determine any sample position offset. Those corrections are only achievable with a combination of high precision sample positioning and a large detector coverage as on HIPPO. Here we present the capabilities of the new robotic sample changer to help improve texture and strain measurements on the HIPPO instrument.

Adrian Losko  
New Mexico State University

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