W0178

Easy and Efficient Data Collection at IMCA-CAT Through Beamline Automation. K.P. Battaile, A. M. Mulichak, I. Koshelev, R. Huang, J.L. Muir, K.S.M. Favale, A. Bertling, L.J. Keefe, IMCA-CAT, Argonne National Lab, 9700 S. Cass Ave., Bldg 435A, Argonne, IL 60439.

Pharmaceutical research and development as well as structural genomics projects rely on high-throughput methods for synchrotron data collection. The typical general user may not require the throughput needed by industry, but automation technology can make their data collection easier and more efficient. IMCA-CAT is the only facility open to general users at the APS that has implemented robotics to mount samples, automatically center cryoloops and screen and collect data. The system we have installed is a Rigaku/MSC ACTOR robot controlled by JDirector software. Use of the robot to mount and center the samples results in a significant time savings by eliminating the need to repeatedly enter and exit, and thus search-and-secure, the end station. The ACTOR system also reduces operator fatigue, thereby reducing mistakes. The JDirector software is organized in a tabbed-notebook format that is easy to learn and is integrated with beamline controls, making it ideal for MAD data collection. The integrated robotics on 17-ID can reduce the number of people required to collect data and increase the amount of data that can be collected during a synchrotron visit.