

2018 ALS User Meeting Workshop

Beamline Controls in Python with Xi-cam, Bluesky, and PyDM

October 4, 2018

8:30 AM - 12:00 PM

Workshop Organizers

Ronald J Pandolfi, CAMERA, LBNL

Guillaume Freychet, ALS, LBNL

Workshop Abstract

With increasing interest in beamline automation and reactive, data-driven acquisition, support software to complement the LabView environment at the ALS is in development. In collaboration with [CAMERA](#), ALS, NSLS-II, and LCLS, a Python-based controls interface will be demonstrated that combines the capabilities of Xi-cam (LBNL), Ophyd/Bluesky (BNL), and PyDM/Typhon (LCLS). This suite of open-source tools provides a graphical, scriptable, and customizable environment for user-facing controls. Xi-cam is available for [download](#) online.

Agenda (Tentative)

Day 1 - **Room 2-400F** Thursday October 4, 2018

Chair: Guillaume Freychet

- 8:30 AM *Beamline Controls in Xi-cam*
Ronald J Pandolfi, CAMERA, LBNL
- 9:00 AM *Neural networks toward beam size prediction and control*
Shuai Liu, University of Berkeley
- 9:15 AM *Workflow development in Xi-CAM*
Harinarayan Krishnan, CAMERA, LBNL
- 9:30 AM *ALS Beamline Controls System*
Kevan Anderson, Advanced Light Source, LBNL

10:00 AM Break

Chair: Ronald J Pandolfi

- 10:30 AM *PYDM: Python User Interfaces and Applications*
Hugo Slepicka/Theodore Rendahl, LCLS, SLAC
- 11:00 AM *Autonomous X-Ray Scattering Experiments through Surrogate Models and Optimization*

	Marcus Noack, CAMERA, LBNL
11:30 AM	<i>Hackathon De-briefing and Demonstration with Hardware</i> Ronald J Pandolfi, CAMERA, LBNL
12:00 PM	Lunch at ALS Patio