APS Scientific Computation Seminar Series

Speaker: Doga Gursoy, Computational Scientist
X-ray Science Division
Argonne National Laboratory

Title: Coded-Apertures for Depth-Resolved X-ray Laue Microdiffraction

Date: Monday, February 14, 2022

Time: 1:00 p.m. (Central Time)

Location: **Join ZoomGov Meeting**
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Hosts: Mathew Cherukara and Nicholas Schwarz

Abstract: Doga Gursoy will introduce a rapid data acquisition and reconstruction method to image the internal microstructure of crystalline materials using Laue diffraction. Our method relies on scanning a coded aperture across the diffracted x-ray beams from a broadband illumination, and a reconstruction algorithm to resolve Laue patterns as a function of depth along the incident illumination path. This method provides a rapid access to full diffraction information at sub-micrometer volume elements in bulk materials. In this talk, Doga will present the underlying theory and the experimental validation, as well as the roadmap for this new imaging approach.