

Virtual Hard X-Ray Collaboration Seminar Series

Date: Thursday 25th November 2021

Title: Intensity correlation techniques for photon and electron diagnostics

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Abstract:

Characterizing the spatiotemporal properties of XFEL pulses is of great importance for analyzing experiments and providing effective feedback to machine operations. As simple and cost-effective ways to diagnose XFEL pulses and electron bunches, we have developed X-ray intensity correlation techniques using undulator radiation [1] and fluorescence [2,3]. In this presentation, I will talk about the concepts of these techniques and their applications to XFEL pulses from SACLA. Also, I will present the application of the diagnostic technique to an experiment of nonlinear x-ray optics [4].

[1] I. Inoue et al., Phys. Rev. Accel. Beams. 21, 080704 (2018).

[2] I. Inoue et al., J. Synchrotron Rad. 26, 2050 (2019).

[3] N. Nakamura et al., J. Synchrotron Rad. 27, 1366 (2020).

[4] I. Inoue et al., Phys. Rev. Lett. 127, 163903 (2021).