Contribution ID: **100** Contribution code: **TUP100-THA** Type: **Poster Presentation**

Method for measuring the transverse electron beam size with intensity interferometry at free-electron lasers

Tuesday 20 August 2024 20:40 (20 minutes)

We demonstrate the feasibility of measuring the spatial intensity correlation function of synchrotron radiation at free-electron laser facilities. For this technique, it is sufficient to use a synchrotron radiation imager paired with an undulator commissioning crystal monochromator at Bragg's angle. By measuring the transverse intensity correlation, we retrieved the electron beam size at the undulator cell where this radiation was emitted. We tested this technique at the hard X-ray SASE1 and SASE2 beamlines of the European XFEL.

Footnotes

Funding Agency

Authors: TREBUSHININ, Andrei (European XFEL GmbH); QIN, Weilun (Deutsches Elektronen-Synchrotron); FREUND, Wolfgang (European XFEL GmbH); KOCH, Andreas (European XFEL GmbH); GRÜNERT, Jan (European XFEL GmbH); GELONI, Gianluca (European XFEL GmbH); SERKEZ, Svitozar (European XFEL GmbH)

Presenter: TREBUSHININ, Andrei (European XFEL GmbH)

Session Classification: Poster session

Track Classification: Electron diagnostics, timing, synchronization & controls