



Contribution ID: 39

Type: **not specified**

## Transverse Beam Emittance Measurement by Undulator Radiation Power Noise

*Wednesday, 12 May 2021 18:05 (20 minutes)*

Generally, turn-to-turn power fluctuations of incoherent spontaneous synchrotron radiation in a storage ring depend on the 6D phase-space distribution of the electron bunch. In some cases, if only one parameter of the distribution is unknown, this parameter can be determined from the measured magnitude of these power fluctuations. In this contribution, we report the results of our experiment at the Integrable Optics Test Accelerator (IOTA) storage ring, where we carried out an absolute measurement (no free parameters or calibration) of a small vertical emittance (5–15 nm rms) of a flat beam by this new method, under conditions, when the small vertical emittance is unresolvable by a conventional synchrotron light beam size monitor.

**Presenter:** LOBACH, Ihar (University of Chicago)

**Session Classification:** Virtual Diagnostic