

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Nazanin Samadi, PhD Candidate
Physics & Engineering Physics

TOPIC: *A Vertical Phase Space Beam Position and Emittance Monitor for Synchrotron Radiation*

DATE: January 22nd, 2019

TIME: 3:30-4:30 p.m.

PLACE: Physics 103

ABSTRACT:

We will report on a system (ps-BPM) that can measure the electron source vertical position and angular motion along with the vertical source size and angular size at a single location in a synchrotron bend magnet beamline [1]. This system uses a combination of a monochromator and a filter with a K-edge to which the monochromator was tuned in energy. The vertical distribution of the beam with and without the filter was simultaneously visualized with an imaging detector. The small range of angles from the source onto the monochromator crystals creates an energy range that allows part of the beam to be below the K-edge and the other part above. Measurement of the beam vertical location without the absorber and edge vertical location with the absorber allows measurement of the source position and angle. The beam width and edge width give information about the vertical electron source size and angular distribution. The ps-BPM measurements have been made where the electron beam size and angular distribution was adjusted using skew quads. The ps-BPM measurements correlate well with modeling of the ps-BPM system as well as conventional beam size measurements using a pinhole.

References

[1] A phase-space beam position monitor for synchrotron radiation. J Synchrotron Radiat, 2015. 22(4): p. 946-55.

Coffee and Cookies will be served in Physics lounge at 3:00 p.m. for those attending the seminar.