YASAMAN YOUSEFI SIGARI

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EDUCATION

University of Saskatchewan, Canada 2019 - Now
Ph.D. Candidate
Supervisor: Dr. Mark J. Boland , Dr. Johannes M. Vogt
Major: Physics and Engineering Physics
Thesis Proposed in Accelerator Physics "Controlling the first degree of spatial coherence of Synchrotron Radiation using skew quadrupole magnets"
Ferdowsi Uniersity of Mashhad, Iran
Master of Science in Physics
Thesis in theoretical quantum information: "Negativity and Quantum Discord in DAVIES Environments"
Ferdowsi Uniersity of Mashhad, Iran
Bachelor of Science in Physics

SKILLS

Light Source Experiences include:
Bending magnet beamline, Insertion device beamline, Storage Ring emittance measurement, Control Room operation experience.

Physics:
- Experience with single bunch state betatron tune measurement of the storage ring using bunch cleaning technique with fast beam orbit correctors.
- Participated in experiments using the bending magnet beamline suitable for X-ray imaging and rocking curve / diffracted enhanced imaging of live mice, as evidenced by successful computation of the lung rocking curve at the specified energy (33 keV) and analyzer reflection planes Si (2,2,0).
- Participated in experiments using bent Laue crystals in a focusing condition. The crystal type and reflection was Si (3,1,1). The target energy is 33 keV or at the iodine K-edge at 33.17 keV.
- Experience working in IVU beamline with 78 period ID at 7 keV energy, working with SPEC and vacuum tubes, detector setup and beam alignment, changing storage ring magnet parameters to change the transverse beam and monitoring the spatial degree of coherence.
- Experience working with beam based calibration algorithms, Accelerator Toolbox, and pyAT simulation.
- Experience working with live data streams, fast data acquisition system, EPICS.
- Experience with X-ray detector (Scintillating detectors) image data and analysis, back ground subtraction with python libraries.
- Teaching Assistant position in accelerator physics course in USASK and CERN.

Programming & Computer skills:
python (proficient), MATLAB (adequate), C++ (basic),
vim (adequate), git (adequate), Linux operating systems (adequate).

PUBLICATION IN JOURNALS & CONFERENCES

- R. Castle, N. Appathurai, N. Simonson, Y. Yousefi Sigari, M. Boland, F. He, C. Karunakaran, J. Wang, B. Diaz Moreno and V.S.C. Kuppili "Spatial Coherence Length Measurements of the Canadian Light Source BXDS-IVU Beamline", Journal of Synchrotron Radiation, 2024 (submitted)
- H. Shaker, D. Bertwistle, E.J. Ericson, Y.Yousefi Sigari, E. Soltan JACoW **IBIC2023** (2023), WEP036, doi:10.18429/JACoW IBIC2023-WEP036
- L.D. Chapman, et al "A deeper understanding of bent Laue crystal X-Ray optics monochromatic focusing", XOPT2023, Tokyo
- Y. Yousefi Sigari, D. Bertwistle and M. Boland, "Vertical Phase Space Measurement Progress at Canadian Light Source," JACoW **IPAC2021** (2021), MOPAB310 doi:10.18429/JACoW-IPAC2021-MOPAB310
- N. Simonson, M. Boland and Y. Yousefi Sigari' "X-Ray Double Slit Interferometer Progress at CLS," doi:10.18429/JACoW-IPAC2021-THPAB276

PRESENTATION

- Seminar: Emittance of CLS storage ring by measuring degree of coherence using x-ray interferometry 2024

- Seminar: Emittance of CLS storage ring by measuring degree of coherence using x-ray interferometry (technical aspects for CLS staff) 2024

- Science writers and Communication of Canada: *Fourth Generation Light Sources* SWCC 2024

- Poster: *Touschek Scattering in fourth generation light sources*, (**1st DAPI Prize**) CAP 2023

- Poster: *Progress in Transverse Beam size measurements*, (**1st DAPI Prize**) CAP 2021

WORK EXPERIENCE

- AOD Research Assistant at Canadian Light Source [Part Time] 2021- now

- Vice-president at PEGASUS (Physics Graduate Student Association) 2021- now

AWARDS AND SCHOLARSHIPS

Awards

- DAPI Divisional Best Poster Presentation First prize in CAP June 2023

- DAPI Divisional Best Poster Presentation First prize in CAP June 2021

Scholarships

-Herzberg Travel Award 2024

- INSPIRE Fellowship Scholarship 2021-2024

- Dr. Theodore R. Hartz Graduate Scholarship 2021-2022

LANGUAGE

- Farsi (Native), English (proficient), French (basic)

REFERENCES AVAILABLE FOR CONTACT

- Dr. M. J. Boland: mark.boland@usask.ca

- Dr. L. D. Chapman: dean.chapman@usask.ca