Sergei Kladov

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Profile

I am an accelerator science physicist working on VEPP-2000 e^+e^- collider (BINP). I am familiar with beam dynamics, both single-particle and collective. Also interested in programming (see details on my website) and machine learning. I am currently looking for a doctoral program with research related as to these topics, as to the new ones for me (the main thing is that the study is interesting), which are able to expand my horizons. International experience is favorable.

Current Work

Budker Institute of Nuclear Physics   September 2020 – Present

Senior assistant on the VEPP-2000 e^+e^- collider.

- Develop theoretical treatment of beam dynamics in machines with strong coupling (collective effects: wake-fields, two-stream effects; feedback systems)
- Develop Java program for such dynamic modeling
- VEPP-2000 operator-physicist
- Awarded by S. Popov and G. Budker scholarships (different years)

Education

MSc Physics in accelerator science   September 2020 – Present

Novosibirsk National Research State University, Novosibirsk, Russia

GPA – 4.8/5

BSc Physics in accelerator science   September 2016 – June 2020

Novosibirsk National Research State University, Novosibirsk, Russia

GPA – 4.88/5

Work and research experience

Budker Institute of Nuclear Physics   September 2017 – July 2020

Laboratory assistant on VEPP-2000   June 2019 – July 2020

- Develop theoretical treatment of nonlinear betatron dynamics in machines with strong coupling in the simultaneous presence of different resonances
- VEPP-2000 operator-physicist
- Awarded by S. Popov scholarship

Laboratory assistant on electron beam welding machine   June 2018 – December 2018

- Create optical commutator using Arduino
- Operate electron beam welding machine

Assistant researcher of accelerator targets   September 2017 – December 2017

- Modeling the different targets heating by beam passing using COMSOL

International summer schools

1. Machine Learning Algorithms for the prediction of ASTRA Output, DESY, PITZ group, 2021.

Skills and interests

Computer competence

Programming languages: Java, Python, C#, HTML, CSS, JavaScript, C++;

Scientific, industrial software: Mathematica, COMSOL, Arduino, Processing, Fritzing;

Other libraries, frameworks and software: Unity, LibGDX, pyTorch, Scikit-learn, Spring;

Completed a Deep Learning university course.

Languages

Russian: native;

English: advanced level (IELTS ?.?)

Other interests

Machine learning, game developing.

Conferences

1. Sergei K., Evgeny P., "Nonlinear coupling resonances in X-Y coupled betatron oscillations near the main coupling resonance in VEPP-2000 collider", IPAC'21, 2021.
2. Sergei K., Evgeny P., "Two-stream effects in coherent beam-beam oscillations in VEPP-2000 collider near the linear coupling resonance", IPAC'21, 2021.
3. Sergei K., "Study of nonlinear effects near the main coupling resonance in the VEPP-2000 collider", International Scientific Student Conference (ISSC), Instrumental methods and technique of experimental physics, 2020.

Publications

- Two poster publications in IPAC'21 (see conferences).