Sergei Kladov

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Profile

I am an accelerator science physicist, currently working on the VEPP-2000 e^+e^- collider (BINP). My specialization is beam dynamics, both single-particle and collective. My interests also relate to programming (see details on my website) and machine learning. I am currently looking for a strong doctoral program with research related to these topics, or maybe 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 coherent beam dynamics in machines with strong coupling (beam-beam 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 in Physics. Narrow specialization: Accelerator science September 2020 – June 2022

Novosibirsk National Research State University, Novosibirsk, Russia

GPA – 4.9/5

BSc in Physics. Narrow specialization: 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

- Simulate the heating of an accelerator target by a passing beam 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 7.0)

Other interests

Machine learning, game developing.

Conferences

1. S.A. Kladov and E. Perevedentsev, “Nonlinear Coupling Resonances in X-Y Coupled Betatron Oscillations Near the Main Coupling Resonance in VEPP-2000 Collider”, in *Proc. IPAC'21*, Campinas, SP, Brazil, May 2021, pp. 863-865.

2. S.A. Kladov and E. Perevedentsev, “Two-Stream Effects in Coherent Beam-Beam Oscillations in VEPP-2000 Collider Near the Linear Coupling Resonance”, in *Proc. IPAC'21*, Campinas, SP, Brazil, May 2021, pp. 866-869.

3. S.A. Kladov, “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.

4. M.V. Timoshenko *et al.*, “VEPP-2000 Collider Complex Operation in 2019-2021 Runs”, in *Proc. RuPAC'21*, Alushta, Russia, Sep.-Oct. 2021, pp. 28-33.

5. D.B. Shwartz *et al.*, “Round Colliding Beams: Successful Operation Experience”, in *Proc. IPAC'21*, Campinas, SP, Brazil, May 2021, pp. 1326-1329.

Publications in journals