Kirill Khoruzhii

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Education

Bachelor of General and Applied Physics | *in process* — 2019 – until now
Moscow Institute of Physics and Technology | *GPA: 4.9 (9.0/10); Top 10%* — Moscow, Russia

Work Experience

Laboratory Assistant — October 2018 – May 2019
Academic University, Renewable Energy Laboratory — Saint Petersburg, Russia
- spraying coatings
- measurement of sample characteristics

Software Engineer — August 2020 – until now
Terra Quantum — Moscow, Russia
- search and preprocessing of datasets
- NLP in dialog systems, Image Recognition

Junior researcher — August 2021 – until now
Russian Quantum Center, Ultracold Fermions Lab — Moscow, Russia
- lasers stabilization, optics adjustment, MOT preparation, assembly of vacuum systems

Projects and Research

Development of antireflective coatings based on SiO_2/Si_3N_4 — Spring 2019
Academic University, Renewable Energy Laboratory
- under the leadership of Dmitry Kudryashov, necessary coating was obtained, with the rapid spraying process
- the article was published following the results of the activity

Laser locking with doppler-free saturated absorption spectroscopy — Autumn 2021 – Spring 2022
Russian Quantum Center, Ultracold Fermions Lab
- under the leadership of Andrey Turlapov, in the Λ-system, the analytical expression is obtained for peak heights of saturated spectroscopy, which helped to optimize the contrast of spectroscopy
- a stable laser system (power consumption for stabilization ~ 0.5 mW) has been obtained

High-flux source of laser-cooled lithium atoms — Spring 2022 – until now
Russian Quantum Center, Ultracold Fermions Lab
- in the Λ-system, the analytical expression is obtained for the fluorescence of an atomic beam during pumping, which helped to improve the estimate of the number of atoms in the atomic beam
- the number of atoms in an atomic beam is estimated from fluorescence

Coursework

Mathematics: Calculus, Analysis on Manifolds, Harmonic analysis, Linear Algebra, Complex analysis, Computational Mathematics, Equations of Mathematical Physics
Physics: Mechanics, Dynamical systems and chaos, Field Theory, Quantum Physics, Statistical Physics, Quantum Optics, Nonlinear Optics, Condensed matter physics, Experimental Quantum Physics
Informatics: Python, C++, Machine Learning, Advanced Deep Learning, Quantum Computing, Mathematica

Skills

Languages: Russian (native), English (C1), German (A2)
Programming: *Python* (NLP, Image Processing, Time Series Processing), *Wolfram Language*, MatLab, C++, SQL
Other: Soldering, Git, Adobe Illustrator, LaTeX