Vladyslav Karpenko

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Interests

bose-condensation, biophysics, programming

Education

(2020 - today)
Postgraduate student at physics faculty of Taras Shevchenko National University of Kyiv
"Phase Transitions in a dense system of interacting Bosons"

(2018 - 2020)
Physics Faculty of Taras Shevchenko National University of Kyiv
Master's degree, Theoretical Physics
"Modeling the bacteria aerotaxis in a bounded environment"

(2014 - 2018)
Physics Faculty of Taras Shevchenko National University of Kyiv
Bachelor's degree, Theoretical Physics
"Modelling the bacteria motion in an environment with a repellent"

Research

When I was at bachelor and master I used to simulate bacteria density movement within the Keller-Segal-like model.

Bachelor`s degree work illustrates a density response in a one-dimensional system while repellent concentration is a linear coordinate function.

In master`s degree work, it is assumed that a single chemical may be both attractant or repellent, and bacteria can decrease its concentration by eating. The formation of the aerotactic band and its semi-periodic movement were shown.

Now investigating the properties of bosons within the Skyrme-like mean-field model. The most recent publication:
"Self-interacting particle-antiparticle system of bosons"
D. Anchishkin, V. Gnatovskyy, D. Zhuravel, and V. Karpenko
DOI: 10.1103/PhysRevC.105.045205

Computer skills

- Wolfram Language, GNU Octave/MatLab and a bit of COMSOL Multiphysics
- LaTeX and Overleaf
- Git and GitHub
- C/C++, JavaScript, HTML and CSS
- Inkscape vector graphics editor

Languages

- Ukrainian (native)
- Russian (native-like)
- English (has been rated as B2 by the university)