



Olena Luparenko

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RESEARCHER DATA

<https://orcid.org/0009-0008-3005-0531>

<https://scholar.google.com/citations?hl=ru&user=S5vpl1YAAAAJ>

SCIENTIFIC INTERESTS / RESEARCH AREAS

Mechanics of a deformable solid body

Methods of analyzing the strength characteristics of heterogeneous elastic regions with complex physical and mechanical properties

Nonlinear dynamical systems and chaos: modeling, numerical and geometric analysis of dynamical regimes using MATLAB

ACADEMIC DISCIPLINES

Discrete Math

Mathematical methods of operations research

Economic and mathematical modeling: optimization methods and models

EDUCATION

1997 – Donetsk State University, specialty "Mathematics", qualification "Mathematician. Teacher"

2006 – National Aerospace University named after M.E. Zhukovsky "Kharkiv Aviation Institute", candidate of technical sciences, specialty 01.02.04 "Mechanics of deformable solids"

ACADEMIC TITLES

2015 – Associate Professor - Department of Higher and Applied Mathematics of the State Technical University "Pryazovsky State Technical University"

LABOR ACTIVITY INFORMATION (THE LAST 5 YEARS)

01.09.2018 – 31.08.2023 - Pryazovsky State Technical University – Docent at the Department of Higher and Applied Mathematics

01.09.2023 – present – Pryazovsky State Technical University – Docent at the Department of Computer Science

OTHER POSITIONS AND ACTIVITIES

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CERTIFICATION TRAININGS (FOR THE LAST 5 YEARS)

2026. "Chromebook Opportunities for Education", Digital Development Academy LLC
2025. "Comprehensive Course on AI in Education", Ministry of Education and Science of Ukraine; Ministry of Digital Transformation of Ukraine
2025. "AI Academy for Educators by Google", Digital Development Academy LLC
2024. "From Beginner to Expert in AI", Ministry of Digital Transformation of Ukraine; AcademyOcean; Choice31
2023. International Educational Marathon within the Erasmus+ CBHE project "Digitalization of Economic as an Element of Sustainable Development of Ukraine and Tajikistan (DigEco 618270-EPP-1-2020-1-LT-EPPKA2-CBHE-JP)"
2021. "Basics of Small Innovation Business", Sikorsky Challenge

PARTICIPATION IN INTERNATIONAL PROJECTS

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LANGUAGES

Native language: Ukrainian, C1
Foreign languages. German, B2

PUBLICATIONS

Total number: 81

In the last 5 years: 21

1. Luparenko O. V. Analysis of the spectrum of resonance frequencies and eigenforms of oscillations of a piecewise inhomogeneous region of rectangular cross-section / O. V. Luparenko // International scientific journal "Grail of Science", I Correspondence International Scientific and Practical Conference "An integrated approach to science modernization: methods, models and multidisciplinary", (February 19, 2021), NGO European Scientific Platform (Vinnytsia, Ukraine), LLC International Center Corporate Management (Vienna, Austria). – 2021. – No. 1. – P. 269-277.
2. O. V. Luparenko Mathematical study of the peculiarities of the concentration of dynamic stresses in the vicinity of a solder joint under resonance conditions / O. V. Luparenko // International scientific journal "Grail of Science", I Correspondence International Scientific and Practical Conference "Science of post-industrial society: globalization and transformation processes", (June, 2021), NGO European Scientific Platform (Vinnytsia, Ukraine), LLC International Center Corporate Management (Vienna, Austria). – 2021. – No. 5. – P. 135-141.
3. Luparenko O.V. Peculiarities of the application of the modified superposition method for the study of steady oscillations of an inhomogeneous rectangular region with an internal hole / Scientific Collection "InterConf", (99): with the Proceedings of the 4th International Scientific and Practical Conference "International scientific discussion: problems, tasks and prospects" (February 19-20, 2022). Brighton, Great Britain: A.C.M. Webb Publishing Co Ltd., 2022. - 753-762 p.



4. Luparenko O.V. Analysis of the spectrum of resonant frequencies and eigenforms of oscillations of a piecewise inhomogeneous region of rectangular cross-section / State, trends and prospects of land sciences, environment, physics, mathematics and statistics' development: Collective Scientific Monograph (1st edition). Kalts T. (ed.). Dallas, USA: Primedia eLaunch LLC, 2022. – Ch. 5. – 59-69 p.
5. Luparenko O.V. Numerical analysis of the features of local stress concentration in a non-homogeneous rectangular region with an internal hole Luparenko // International scientific journal "Grail of Science", V Correspondence International Scientific and Practical Conference "Science of post-industrial society: globalization and transformation processes", (May 12, 2023), NGO European Scientific Platform (Vinnytsia, Ukraine), LLC International Center Corporate Management (Vienna, Austria). – 2023. – No. 27. – P. 398-403.
6. Luparenko O.V., Grafov V.V., Kozlov M.A. Visualization and investigation of continuous dynamical systems in the MATLAB environment // International scientific journal "Grail of Science". – Vinnytsia, Vienna: NGO "European Scientific Platform". – 2024. – No. 38. – P. 200–205.
7. Luparenko O.V. Features of the generalized superposition method in problems of harmonic oscillations in rectangular domains with a "checkerboard" heterogeneity structure // International scientific journal "Grail of Science". – Vinnytsia, Vienna: NGO "European Scientific Platform". – 2024. – No. 38. – P. 216–223.
8. Luparenko O.V., Grafov V.V., Kozlov M.A. Visualization and numerical analysis of phase trajectories of continuous dynamical systems using MATLAB // International scientific journal "Grail of Science". – Vinnytsia, Vienna: NGO "European Scientific Platform". – 2025. – No. 53. – P. 589–599.
9. Luparenko O. V. Graphical Methods for Investigating Phase Trajectories of Continuous Dissipative Dynamical Systems in the MATLAB Environment. *Bulletin of the Pryazovskyi State Technical University. Series: Technical Sciences*. 2026. Issue 53, Vol. 1. P. 43–53.

**DATE OF
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28.04.2026