

Candidate supervisor's information summary form
maximum 2 pages – it should be a summary of most important achievements

Name and surname, degree, title:	Ph.D. Dr.Sc. Alexander Prokopenya
Discipline/ disciplines of science	Information and communication technology
Professional development (degrees and titles) in chronological order	<p>1983 – Master in Theoretical and Mathematical Physics, M.V. Lomonosov State University in Moscow, Faculty of Physics</p> <p>1988 - PhD in Theoretical and Mathematical Physics, M.V. Lomonosov State University in Moscow, Faculty of Physics</p> <p>2007 - Dr.Sc. (habilitation), Mathematical Sciences, Specialization: Informatics, A.A. Dorodnitsyn Computing Center of the Russian Academy of Science, Moscow (nostrification at the Jagiellonian University, Cracow, 2010)</p>
Most important publications/patens over the last 3 years (maximum 10)	<p>A. Prokopenya, M. Minglibayev, A. Kosherbayeva. <i>Secular evolution of a two-planet system of three bodies with variable masses</i>. Universe 11, 335 (2025).</p> <p>A. Prokopenya, M. Minglibayev, M. Saparova. <i>Symbolic calculations in the study of secular perturbations in the many-body problem with variable masses</i>. Programming and Computer Software 51(1) 31 – 40 (2025)</p> <p>A. Prokopenya, M. Minglibayev, A. Ibraimova. <i>Perturbation methods in solving the problem of two bodies of variable masses with application of computer algebra</i>. Applied Sciences 14, 11669 (2024)</p> <p>M.Zh. Minglibayev, A.N. Prokopenya, A.B. Kosherbaeva. <i>Secular evolution of circumbinary 2-planet systems with isotropically varying masses</i>. Monthly Notices of the Royal Astronomical Society, 530, 2156-2165 (2024)</p> <p>A. Prokopenya, M. Minglibayev, A. Kosherbayeva. <i>Modeling the dynamics of a multi-planetary system with anisotropic mass variation</i>. In: Franco, L. et al. (eds.) Computational Science – ICCS 2024. ICCS 2024. Lecture Notes in Computer Science, vol. 14836, Springer, Cham, 181 – 196 (2024)</p> <p>A. Prokopenya. <i>Resonances and periodic motions of Atwood's machine with two oscillating weights</i>. Programming and Computer Software, 49(5), 433-440 (2023)</p>
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	<p>Supervisor of 6 defended PhD dissertations:</p> <p>1. Dzmitry Budzko. Equilibrium solutions of motion's differential equations of restricted four-body problem and their stability. Belarussian State University, Minsk, Belarus, 2012.</p> <p>2. Gulnara Mayemerova. Secular perturbations in the problem of three bodies of variable masses. Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2013</p>

	<p>3. Saule Shomshekova. Investigation of dynamical evolution of non-stationary exoplanetary systems, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2020.</p> <p>4. Saltanat Bizhanova. The translational-rotational motion of an axisymmetric body of variable mass and size in a non-stationary central gravitational field, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2020.</p> <p>5. Oralkhan Baisbayeva. Study of translational-rotational motion of a three-axial non-stationary body in the gravitational field of a non-stationary spherical body, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2020.</p> <p>6. Aigerim Ibraimova. Dynamics of a small body with variable mass in the gravitational field of binary systems with variable masses in the presence of reactive forces, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2020.</p> <p>Supervisor in 2 open doctoral dissertations:</p> <p>Zhanar Imanova, Secular perturbations in the two-planetary problem of three bodies of variable masses, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2015.</p> <p>Moldir Saparova, Investigation of the rotational-translational motion of a non—stationary triaxial body in a central gravitational field, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2024.</p>
Achievements in the area of projects/grants (in the last 5 years)	Ministry of Science and Higher Education of the Republic of Kazakhstan, project AP14869472 "Investigation of secular perturbations in multi-planet systems with spherical bodies of variable mass", 2022 – 2024.
Subject area of the research project for which the candidate student is being recruited	Mathematical modelling; Computer Algebra and Applications; Dynamical systems and motion stability; Algorithms for symbolic computation in studying the stability of motion.
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