

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.N. Prokopenya. <i>Searching for equilibrium states of Atwood's machine with two oscillating bodies by means of Computer Algebra</i>. Programming and Computer Software, 47(1), 43 – 49 (2021).</p> <p>A.N. Prokopenya. <i>Construction of a periodic solution to the equations of motion of generalized Atwood's machine using computer algebra</i>. Programming and Computer Software, 46(2), 120 – 125 (2020).</p> <p>M. Minglibayev, A. Prokopenya, O. Baisbayeva. <i>Evolution equations of translational-rotational motion of a non-stationary triaxial body in a central gravitational field</i>. Theoretical and Applied Mechanics, 47(1), 63 – 80 (2020).</p> <p>S.B. Bizhanova, M.Zh. Minglibayev, A.N. Prokopenya. <i>A study of secular perturbations of translational-rotational motion in a nonstationary two-body problem using computer algebra</i>. Computational Mathematics and Mathematical Physics, 60(1), 27 – 36 (2020).</p> <p>A.N. Prokopenya, M. Minglibayev, S. Shomshekova. <i>Applications of computer algebra in the study of the two-planet problem of three bodies with variable masses</i>. Programming and Computer Software, 45(2), 73–80 (2019).</p> <p>A.N. Prokopenya. <i>Modelling Atwood's machine with three degrees of freedom</i>. Mathematics in Computer Science, 13, 247 – 257 (2019).</p> <p>R. Kozera, A.N. Prokopenya. <i>Application of computer algebra to photometric stereo with two light sources</i>. Programming and Computer Software, 44(2), 112 – 119 (2018).</p> <p>A.N. Prokopenya. <i>Numerical-symbolic methods for searching relative equilibria in the restricted problem of four bodies</i>. Mathematical Modelling and Analysis, 23 (3), 507 – 525 (2018).</p>

<p>Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order</p>	<p>Supervisor of 3 defended PhD dissertations:</p> <ol style="list-style-type: none"> Dzmitry Budzko. Equilibrium solutions of motion's differential equations of restricted four-body problem and their stability. Belarussian State University, Minsk, Belarus, 2012. Gulnara Mayemerova. Secular perturbations in the problem of three bodies of variable masses. Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2013 Saule Shomshekova. Investigation of dynamical evolution of non-stationary exoplanetary systems, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2020. <p>Supervisor in 3 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>Oralkhan Baisbayeva, Investigation of the rotational-translational motion of a non—stationary triaxial body in a central gravitational field, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2017.</p> <p>Saltanat Bizhanova, Investigation of the rotational-translational motion of a non—stationary dynamically symmetric body in a central gravitational field, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 2018.</p>
<p>Project/grants achievements (from the last 10 years)</p>	<p>Guest researcher grant on Simulation of quantum computation with Mathematica, XLIM Institute, University of Limoges, France, May-June 2014.</p> <p>Project No 10-01-00200 <i>Computer algebra methods in modelling quantum computation and discrete systems</i>, Russian Foundation for Fundamental Research, project contractor, finished in 2012.</p> <p>Project No 10-01-00283 <i>Development of asymptotic theory of ordinary differentia equations of N.N. Bogolubov for the many-frequency systems</i>, Russian Foundation for Fundamental Research, project contractor, finished in 2011.</p>
<p>Topic – research problem – for which the candidate supervisor seeks a doctoral student</p>	<p>Mathematical modelling; Computer Algebra and Applications; Dynamical systems and motion stability; Simulation of quantum computation; Computer vision.</p>
<p><u>Contact details:</u> Faulty/Institute E-mail address Tel.</p>	<p>Faculty of Applied Informatics and Mathematics / Institute of Information Technology e-mail:alexander_prokopenya@sggw.edu.pl phone: +48 22 59 37 315</p>