





Dr. E. Nikolaev participated in many other research and development projects carried out at Pushchino Biological Research Center (Russia), University of Leeds (UK), Integrated Genomics, Inc. (Chicago, USA), and Pennsylvania State University (USA). Simultaneously, Nikolaev has made a major pure theoretical contribution to the theory of bifurcations with symmetry. Dr. Nikolaev holds his PhD in Differential Equations and Mathematical Physics from the Lobachevsky Nizhegorod State University, Nizhnii Novgorod, Russia, which is widely recognized as one of the most respected school in the theory of dynamical systems and chaos.

Some of his mathematical results are almost classical. These include a full investigation of local bifurcations of periodic solutions in systems with involutive symmetry and the classification of symmetric periodic solutions and their bifurcations in systems with discrete symmetries. Dr. Nikolaev also co-authored with Prof. E.E. Shnol a paper, where a symmetric version of the famous Andronov-Hopf bifurcation was analyzed. The investigation of this symmetric problem, which has many applications in physics, biology and engineering, has a long history and it is worth noting that two results published in the paper: (1) the completeness of the bifurcation diagram and (2) algebraic conditions for a 3D-sphere to emanate from the equilibrium at a bifurcation point are original contributions to the theory of bifurcations with symmetry. Finally, I would like to mention recent results of Dr. Nikolaev on bifurcations of spiral waves in the plane. This is an important original work, where a combination of the normal form theory with factorization along group orbits results in simple model systems of ordinary differential equations capturing essential bifurcation phenomena of spatial-temporal behavior of systems of nonlinear differential equations with partial derivatives.

Although his teaching experience is based on giving advance courses and supervising PhD students, Dr. E. Nikolaev will not have difficulties in teaching regular courses at different levels.

Finally, I draw your attention to the ability of Evgeni to cooperate with people and to inspire them. Here I simply refer to LOCBIF and his leadership of a project at Integrated Genomics, Inc. on the development of stoichiometric pathway modelling tools, as well as to many his publications that are joint with others.

To conclude, I strongly support the application of Dr. E. Nikolaev for a job at your Department. This will not be a standard appointment but your Faculty members and students will profit from it enormously.

Sincerely yours,

Dr. Yu.A. Kuznetsov