DR. LYUDMILA S. EFREMOVA

UNIVERSITY	National Research Lobachevsky State University of Nizhny Novgorod
PROFICIENCY IN ENGLISH	Intermediate
MAJOR OF PH.D. PROGRAMME	Mathematics & Mechanics
CODE OF PH.D. PROGRAMME	01.06.01
RESEARCH PROJECTS OF PROSPECTIVE SCIENTIFIC SUPERVISOR	**RESEARCH PROJECT TEAM LEADER:** «One Dimensional Dynamic Systems», RFFR, 20-11-50045, 2020-2022. **RESEARCH PROJECT PARTICIPANT:** «Feynman technique for Hamiltonian systems», RSF, 2020-2022.
TOPICS FOR PROSPECTIVE PH.D. RESEARCH	• Skew products of one-dimensional maps • Quadratic and cubic trace maps • Smooth perturbations of skew products of one-dimensional maps.

Research supervisor:

LYUDMILA S. EFREMOVA,

Professor, Doctor of Science,

Physics & Mathematics

(IPPI named after A.A. Harkevich, Russian Academy of Science)

RESEARCH AREA:
Discrete Dynamical Systems & Trace Maps.

SUPERVISOR'S RESEARCH INTERESTS:
- Discrete Dynamical Systems,
- One-Dimensional Dynamics,
- Regulatory & Chaotic Dynamics,
- Application of Dynamic Systems Theory to Research of Partial Derivative Equations.

RESEARCH HIGHLIGHTS:

- Highly-equipped labs & research environment, including Supercomputer «Lobachevsky».
- Grant project involvement.
- Cooperation with leading IT-companies (HUAWEI, INTEL, MERA, NVIDIA).
- Prospective participation in international joint research projects (French & Italian universities).

SUPERVISOR'S SPECIFIC REQUIREMENTS:
- *Master Degree in Mathematics, Computer Science, Software Engineering or IT;*
- *Relevant proficiency in Mathematical Analysis, Differential Equations, Mathematical Physics Equations, Functional Analysis, Theory of Dynamic Systems.*
- *Research skills under the above-mentioned courses.*

SUPERVISOR'S MAIN PUBLICATIONS:
- S. S. Belmesova, L. S. Efremova, «On the concept of integrability for discrete dynamical systems. Investigation of wandering points of some trace map", Nonlinear maps and their applications, Springer Proc. Math. Statist., 112, Springer, Cham, 2015, 127–158.
- L.S.Efremova, A.D.Grekhneva, V.Zh. Sakbaev, «Phase Flows Generated by Cauchy Problem for Nonlinear Schrödinger Equation and Dynamical Mappings of Quantum States», LoJM, 40(10) (2019), c. 1455-1469

	- L.S. Efremova, «Periodic behavior of maps obtained by small parturbations of smooth skew products», Discontinuity, Nonlinearity, Complexity" 9:4 (2020), 519-523. - L.S.Efremova, «Small Perturbations of Smooth Skew Products and Sharkovsky Theorem», J. Difference Equations and Applications (2020), DOI: 10.1080/10236198.2020.18004556. - L.S.Efremova, «Small C1-smooth perturbations of skew products and the partial integrability roperty», Applied Math. and Nonlinear Sci., 2020.