Scientific profile structure (portfolio) of potential research supervisor as participant of the International Olympiad in the Association "Global universities" on the postgraduate studies track in 2025-2026.

<table>
<tr><td>University</td><td>Samara National Research University</td></tr>
<tr><td>English proficiency</td><td>Fluent</td></tr>
<tr><td>Educational program and field of the educational program for which the applicant will be accepted</td><td>2.5.16. Dynamics, ballistics, aircraft motion control</td></tr>
<tr><td>List of research projects of a potential supervisor</td><td>Head of the RNF Grant No. 22-29-01092 "Design and ballistic analysis of spacecraft missions with low-thrust engines in a gravitational field with an irregular structure"</td></tr>
<tr><td>List of possible research topics</td><td>● Motion control of spacecraft with electric rocket engines.
● Motion control by solar sail spacecraft.
● Control and movement of spacecraft in the vicinity of libration points of the Earth-Moon and Earth-Sun systems</td></tr>
<tr><td rowspan="4"> 
Research supervisor:
Olga L. Starinova,
Doctor of Technique Science at Samara University

Video:
https://vk.com/im?peers=23571154_545984707_134623115_248143017_40778876_311355658_c19_73273486&sel=589018760&z=video-65854460_456249975%2F9681ed077c1b57ab2b</td><td>Ballistics and spacecraft motion control</td></tr>
<tr><td>Supervisor’s research interests:
Optimal control, ballistic design of spacecraft missions, low-thrust propulsion</td></tr>
<tr><td>Research highlights:
● Professional, responsive and cohesive research team.
● Interaction is carried out with leading Russian and foreign scientists working in the field of interests of the scientific group.
● The results of scientific work are constantly published in highly cited scientific journals and reported at leading specialized international conferences.</td></tr>
<tr><td>Supervisor’s specific requirements:
None</td></tr>
<tr><td></td><td>Supervisor’s main publications:
41 publications in journals indexed by Web of Science or Scopus over the past 5 years
1. Rozhkov M.A., Starinova O.L. Optimization of Solar-Sail Control When a Vehicle Moves along Cyclic Heliocentric Trajectories // Cosmic Research 2023. — Vol. 61. Issue 6. № 6. — P. 534-543.
2. Nikolaeva E.A., Starinova O.L. The use of a heavy spacecraft with low-thrust engines to deflect an asteroid from a dangerous trajectory // Bulletin of the Moscow Aviation Institute. 2019. Vol. 26. No. 2. pp. 166-174.
3. Rozhkov, M.A. The influence of optical parameters on the movement of the solar sail / M.A.Rozhkov, O.L. Starinova, I.V. Chernyakina // Successes of space research, 2021, Vol. 67. No. 9. pp. 2757-2766. doi: 10.1016/j.asr.2020.06.017 (Q1)
4. Du, S., Starinova, O., Liu, Yu. Planning the trajectory of low-thrust transmission and tracking it in the elliptical bounded problem of three bodies Earth-Moon // Nonlinear dynamics, 2023 doi: 10.1007/s11071-023-08383-0 (Q1)
5. Starinova O.L., Lobykin A.A., Rozhkov M.A. Optimization of heliocentric flights of a spacecraft with different types of electric rocket engines // Space technology and technologies. 2023. No. 1 (40). pp. 94-104.</td></tr>
</table>

	Results of intellectual activity Methods of multi-criteria design and ballistic optimization of flights of spacecraft with low-thrust engines, in particular with electric rocket propulsion systems and solar sail, have been developed. The problems of optimal control of spacecraft with electric rocket engines operating under the influence of gravitational fields of complex configuration (near libration points and in halo orbits of the Earth-Moon, Sun-Earth systems, asteroids, comets and satellites of irregular planets) have been solved. The problems of optimal and locally optimal control of a spacecraft with an imperfectly reflecting degrading solar sail moving in the light-gravity field of an extended Sun, taking into account relativistic effects and restrictions on surface temperature, are solved. 18 certificates of intellectual property registration: 1. Sergaeva E.A., Starinova O.L., Rozhkov M.A. Determination of optimal motion control of a spacecraft with an electric rocket propulsion system using the Pontryagin maximum principle Certificate of registration of a computer program 2022617890, 04/26/2022. Application No. 2022613916 dated 03/18/2022. 2. Starinova O.L., Khabibullin R.M., Tkachenko I.S., Ivanushkin M.A. The program "Simulation of Controlled Orbital Motion (S-COM)" for modeling controlled orbital motion and determining the elements of the orbit of a small spacecraft during maneuvers Certificate of registration of the computer program 2023615121, 03/10/2023. Application No. 2023610975 dated 23.01.2023