

Maksim Shirobokov

Keldysh Institute of Applied Mathematics
125047, 4 Miusskaya Pl., Moscow, Russian Federation
Phone: +7(499)220-79-77
Email: shirobokov@keldysh.ru
URL: [ResearchGate Page](#)
ORCID: [0000-0002-1747-6430](#)
Scopus ID: [55788221700](#)
Elibrary SPIN: [7046-4960](#)
ResearcherID: [S-2520-2016](#)



Current position

Researcher, Keldysh Institute of Applied Mathematics, Moscow
Assistant Professor, Moscow Institute of Physics and Technology, Moscow

Areas of specialization

- Preliminary mission analysis
- Trajectory optimization, optimal control design
- Restricted three-body problem, station-keeping analysis
- Small spacecraft mission analysis
- Numerical methods in astrodynamics

Education

2017 Ph.D. in Theoretical Mechanics, Keldysh Institute of Applied Mathematics
2013 M.Sc. in Applied Mathematics and Physics, MIPT
2011 B.Sc. in Applied Mathematics and Physics, MIPT

Teaching

“Numerical Methods in Astrodynamics”, MIPT
“Probability Theory”, “Stochastic Processes”, and “Mathematical Statistics”, MIPT

Featured publications

- 2017 Shirobokov, M., Trofimov, S., Ovchinnikov, M. “Station-keeping of Sun-Venus L2 Libration Point Orbits for a Prospective Space Observatory Mission,” Proceedings of the 68th International Astronautical Congress, 2017, Vol., pp. (Paper IAC-17.C1.7.4).
- 2017 Shirobokov, M., Trofimov, S., Ovchinnikov, M. “Pareto-optimal Low-Thrust Lunar Transfers With Resonant Encounters,” Advances in the Astronautical Sciences, Vol. 161, pp. 485–498 (Paper IAA-AAS-DyCoSS3-033, AAS 17-885).
- 2017 Shirobokov, M., Trofimov, S., Ovchinnikov, M. “Survey of Station-Keeping Techniques for Libration Point Orbits,” Journal of Guidance, Control, and Dynamics, 2017, Vol. 40, No. 5, pp. 1085–1105. URL: <http://dx.doi.org/10.2514/1.G001850>
- 2016 Shirobokov, M., Trofimov, S., Ovchinnikov, M. “Recovery of Halo Orbit Missions in Case of Contingent Station-Keeping Maneuver Delay,” Advances in Space Research, 2016, Vol. 58, No. 9, pp. 1807–1818. URL: <http://dx.doi.org/10.1016/j.asr.2016.07.003>
- 2016 Shirobokov, M., Trofimov, S. “Parametric Analysis of Low-Thrust Lunar Transfers with Resonant Encounters,” Advances in the Astronautical Sciences, 2016, Vol. 158, pp. 579–603.

Textbook

- 2016 Ivanov, D., Trofimov, S., Shirobokov, M. “Numerical Modeling of Spacecraft Orbital and Attitude Motion,” Keldysh Institute of Applied Mathematics, Moscow, 2016, ISBN 978-5-98354-023-1. (in Russian)

Dissertations

- 2017 Shirobokov, M. “Trajectory design and navigation aspects of small spacecraft missions to the Moon and libration points,” Ph.D. Thesis, Keldysh Institute of Applied Mathematics, Moscow, 181 p. (in Russian)
- 2013 Shirobokov, M. “Design of Interplanetary Transfers with Passive Gravity Assists and Deep Space Maneuvers,” M.Sc. Thesis, Moscow Institute of Physics and Technology, Moscow, 50 p. (in Russian)
- 2011 Shirobokov, M. “Method of Virtual Trajectories for the Design of Gravity Assisted Missions,” B.Sc. Thesis, Moscow Institute of Physics and Technology, Moscow, 32 p. (in Russian)