CURRICULUM VITAE

Yaroslav Mashtakov

Affiliation and official address: Junior Researcher at the Keldysh Institute of Applied Mathematics of Russian Academy of Sciences (KIAM RAS), Miusskaya Sq. 4, Moscow 125047 Russia
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Date and place of birth: 21, December, 1991, Moscow, Russia

Education (*degrees, dates, universities)*

M.Sc., 2015 from the Moscow Institute of Physics and Technology

Career/Employment (*employers, positions and dates)*

(October 2015-till present) PhD student at Moscow Institute of Physics and Technology
(January 2012-till present) Junior Researcher at the Keldysh Institute of Applied Mathematics of Russian Academy of Sciences (part time)
(September 2009-June 2015) Student at Moscow Institute of Physics and Technology, Department of Control and Applied Mathematics

Specialization

Spaceflight dynamics, attitude motion, active and passive attitude control of spacecraft, sliding mode control, Lyapunov based control, optimal control, large space structures; Earth remote sensing, formation flight, interplanetary flight

Main recent projects:

- (2016-2017) Scholarship of the Russian Federation President for PhD Students (PI)
- (2016-2018) Grant № 16-01-00634 “Simulation and motion control of flexible elongated space constructions” of the Russian Foundation for Basic Research (I)
- (2016-2018) Grant № 16-01-00739 “Modeling and Motion Control of Distributed Satellite Systems” of the Russian Foundation for Basic Research (I)
- (2015-2016) Grant № 15-31-20058 “Precise angular motion control algorithms for small satellite with limited control authority and sensor deficiency” of the Russian Foundation for Basic Research (I)
- (2014-2016) Grant № 14-11-00621 “New mathematical models and control algorithms for angular and orbital motion of small satellites for Moon and minor Solar system bodies investigation” of Russian Scientific Foundation (I)
- (2013-2015) Grant № 13-01-00665 “Motion study and control algorithms development for dynamic reconfiguration of the microsatellite formation including its de-orbiting” of the Russian Foundation for Basic Research (I)
- (2012-2014) Grant № 12-01-33045 “Perspective algorithms and methods of the attitude and orbital motion control for small satellites and their formations” of the Russian Foundation for Basic Research (I)

Publications:

- Number of papers in refereed journals: 4
- Number of communications to scientific meetings: 12

- Number of preprints of the Keldysh Institute: 5
- Total number of papers: 24

Peer-reviewed journal articles:

1. M.Yu. Ovchinnikov, D.S. Roldugin, V.I. Penkov, S.S. Tkachev, Y.V. Mashtakov. Fully magnetic sliding mode control for acquiring three-axis attitude // Acta Astronautica, 2016, V. 121, pp. 59-62
   http://dx.doi.org/10.1016/j.actaastro.2015.12.031
2. M.Yu. Ovchinnikov, S.S. Tkachev, D.S. Roldugin, A.B. Nuralieva, Y.V. Mashtakov. Angular motion equations for a satellite with hinged flexible solar panel // Acta Astronautica, 2016, V. 128, pp. 534-539
   http://dx.doi.org/10.1016/j.actaastro.2016.07.038
3. Y.V. Mashtakov, M.Yu. Ovchinnikov, S.S. Tkachev. Study of the disturbances effect on small satellite route tracking accuracy // Acta Astronautica, 2016, V. 129, pp. 22-31
   http://dx.doi.org/10.1016/j.actaastro.2016.08.028
4. R.V. Yelnikov, Y.V. Mashtakov, M.Yu. Ovchinnikov, S.S. Tkachev. Orbital and angular motion construction for low thrust interplanetary flight // Cosmic Research, 2016, V. 54, No. 6, pp. 483–490.

Preprints of the Keldysh Institute of Applied Mathematics:

1. Y.V. Mashtakov, S.S. Tkachev. Effect of disturbances on attitude precision of the remote sensing satellite // Keldysh Institute Preprints, 2016, № 18, 28 p.
2. D.S. Ivanov, Y.V. Mashtakov, et al. Falling Point Estimation of a Body in Earth Gravitational Field by Using Measurements of Several Motion Parameters // Keldysh Institute Preprints, 2015, № 52, 32 p.
3. Y.V. Mashtakov, S.S. Tkachev. Angular motion synthesis for interplanetary flight // Keldysh Institute Preprints, 2015, № 24, 16 p.
4. M.Yu. Ovchinnikov, D.S. Roldugin, V.I. Penkov, S.S. Tkachev, Y.V. Mashtakov. Sliding mode control for three-axis magnetic attitude // Keldysh Institute Preprints, 2014, № 56, 13 p.
5. Y.V. Mashtakov, S.S. Tkachev. Synthesis and constructing the angular motion of the remote sensing satellite for tracking the trajectory on the Earth surface // Keldysh Institute Preprints, 2014, № 20, 31 p.

Main conferences

1. 10th IAA Symposium “Small satellites for Earth observation”, Berlin, April 2015. Presentation “Angular motion synthesis for remote sensing satellite”
2. 10th IAA Symposium “Small satellites for Earth observation”, Berlin, April 2015. Presentation “Sliding mode control for three-axis magnetic attitude”
3. 3rd IAA Conference on University Satellite Missions & CubeSat Workshop, Rome, December 2015. Presentation “Analytical study of the disturbances effect on the remote sensing image quality”
4. The XIth all-Russian congress on basic problems of theoretical and applied mechanics, Kazan, August, 2015. Presentation “Spacecraft angular and orbital motion construction for interplanetary flight”
5. 5th All-Russian conference “Modern problems of attitude and navigation of satellite”, Tarusa, Russia, September, 2016. Presentation “Modelling and motion control of satellite tetrahedral formation”

6. 5th All-Russian conference “Modern problems of attitude and navigation of satellite”, Tarusa, Russia, September, 2016. Presentation “Application of the magnetic coils for reaction wheels desaturation”
7. 4th All-Russian conference “Modern problems of attitude and navigation of satellite”, Tarusa, Russia, September, 2014. Presentation “Application of reaction wheels for thrust vector control during interplanetary flight”