

Dmitry A. Sizov
Doctor
School of Engineering and Digital Sciences



Research interests

Active Space Debris Removal
Spacecraft Attitude Dynamics
Re-entry Dynamics
Classical Mechanics
Regular and Chaotic Dynamics

Qualifications

Fluid Dynamics, PhD (Ru: Candidate of Technical Sciences), Kazan National Research Technical University named after A.N. Tupolev
2009 → 2013
Award Date: Dec 4 2013
Mechanical Engineering, MSc (Ru: Specialist), Samara State Technical University
2002 → 2007
Award Date: Jun 13 2007

Employment

Instructor

Doctor
School of Engineering and Digital Sciences
Kazakhstan
Aug 1 2023 → present

Researcher

Samara National Research University
Russian Federation
Jan 1 2018 → Jan 1 2023

Associate professor

Samara State Technical University
Russian Federation
Jan 1 2014 → Jan 1 2023

Assistant professor

Samara State Technical University
Russian Federation
Jan 1 2010 → Jan 1 2014

Instructor

Samara State Technical University
Russian Federation
Jan 1 2007 → Jan 1 2010

Research outputs

Attitude Dynamics of Small Magnetic Axisymmetric Satellites in Near-Equatorial Low Earth Orbits/Very Low Earth Orbits
Sizov, D. A. & Aslanov, V. S., Dec 2024, In: Journal of Guidance, Control, and Dynamics. 47, 12, p. 2544-2559 16 p.

Large Debris Removal: Using Features of Attitude Motion for Load Factor Regulation during Re-Entry
Aslanov, V. S. & Sizov, D. A., Sept 2024, In: Aerospace. 11, 9, 786.

Attitude Dynamics of Small Magnetic Axisymmetric Satellites in Near-Equatorial Low Earth Orbits/Very Low Earth Orbits
Sizov, D. & Aslanov, V. S., Aug 20 2024, In: Journal of Guidance, Control, and Dynamics. 47, 12 (2024), p. 2544-2559 16 p.

VLEO CubeSat attitude dynamics during and after flexible panels deployment using torsion springs
Aslanov, V. S. & Sizov, D. A., Sept 2023, In: Acta Astronautica. 210, p. 117-128 12 p.

Attitude Dynamics of Spinning Magnetic LEO/VLEO Satellites
Aslanov, V. S. & Sizov, D. A., Feb 2023, In: Aerospace. 10, 2, 192.

Attitude Dynamics of Small Satellites in Circular Near-Equatorial LEO/VLEO
Aslanov, V. & Sizov, D., 2023.

Attitude Dynamics of Small Satellites in Circular Near-Equatorial LEO/VLEO
Aslanov, V. S. & Sizov, D. A., 2023, In: Proceedings of the International Astronautical Congress, IAC. 2023-October

Chaotic pitch motion of an aerodynamically stabilized magnetic satellite in polar orbits
Aslanov, V. S. & Sizov, D. A., Nov 2022, In: Chaos, Solitons and Fractals. 164, 112718.

Mission Performance Analysis for a Piston-Engined Ultralight Unmanned Helicopter
Onushkin, Y. P., Sizov, D. A. & Ostrovoi, A. V., Jan 2022, In: Russian Aeronautics. 65, 1, p. 121-131 11 p.

Chaos in flexible CubeSat attitude motion due to aerodynamic instability
Aslanov, V. S. & Sizov, D. A., Dec 2021, In: Acta Astronautica. 189, p. 310-320 11 p.

Analytical Calculation and Optimization of Performance Characteristics of the Ultralight Helicopter with Piston Engine
Onushkin, Y. P., Sizov, D. A., Ostrovoi, A. V. & Nosov, A. A., Jul 2021, In: Russian Aeronautics. 64, 3, p. 488-496 9 p.

Optimal thrust control during tether deployment after harpoon capture of space debris
Sizov, D. A. & Aslanov, V. S., Feb 22 2021, *XLIV Academic Space Conference: Dedicated to the Memory of Academician S.P. Korolev and Other Outstanding Russian Scientists - Pioneers of Space Exploration*. Mikrin, E. A., Rogozin, D. O., Aleksandrov, A. A., Sadovnichy, V. A., Fedorov, I. B. & Mayorova, V. I. (eds.). American Institute of Physics Inc., 050005. (AIP Conference Proceedings; vol. 2318).

Space debris removal with harpoon assistance: choice of parameters and optimization
Sizov, D. A. & Aslanov, V. S., 2021, In: Journal of Guidance, Control, and Dynamics. 44, 4, p. 767-778 12 p.

Chaotic Attitude Motion of 3U CubeSat with Deployable Side Panels
Aslanov, V. & Sizov, D., May 26 2020, *Proceedings of ITNT 2020 - 6th IEEE International Conference on Information Technology and Nanotechnology*. Institute of Electrical and Electronics Engineers Inc., 9253293. (Proceedings of ITNT 2020 - 6th IEEE International Conference on Information Technology and Nanotechnology).

A spent upper stage removal mission aimed to reduce debris impact footprint size
Aslanov, V. S. & Sizov, D. A., Mar 2020, In: Acta Astronautica. 168, p. 23-30 8 p.

3U cubesat aerodynamic design aimed to increase attitude stability and orbital lifetime
Aslanov, V. & Sizov, D., 2020, In: Proceedings of the International Astronautical Congress, IAC. 2020-October

Comprehensive approach to mathematical modeling and helicopter flight task optimization
Onushkin, Y. P., Sizov, D. A. & Poluyakhtov, V. A., Apr 1 2017, In: Russian Aeronautics. 60, 2, p. 184-189 6 p.

On a certain approach to modeling aerodynamics and dynamics of spatial motion of single rotor helicopters
Onushkin, Y. P., Sizov, D. A., Poluyakhtov, V. A., Pidodnya, V. G. & Ostrovoi, A. V., Oct 1 2016, In: Russian Aeronautics. 59, 4, p. 500-506 7 p.

Activities

Passive and active devices for safe deorbiting and reentry of spent upper stages

Dmitry A. Sizov (Speaker)
Jun 6 2024 → Jun 7 2024

Perspective on Active Space Debris Removal Techniques

Dmitry A. Sizov (Speaker)
Apr 11 2024

Towards a Zero Debris Future: Insights from the 21st IAA Symposium on Space Debris

Dmitry A. Sizov (Speaker)
Feb 23 2024

Applied Mechanics with Wolfram Language

Dmitry A. Sizov (Speaker)
Nov 11 2023

Attitude Dynamics of Small Satellites in Circular Near-Equatorial LEO/MEO

Dmitry A. Sizov (Speaker)
Oct 2 2023 → Oct 6 2023

International Astronautical Congress 2023

Dmitry A. Sizov (Invited speaker)
Oct 2 2023 → Oct 6 2023

What is 'space debris', why do we care, and what are we doing about it

Dmitry A. Sizov (Speaker)
Sept 15 2023