Dmitrii **Altukhov**

Junior Researcher · Research assistant

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Education

Specialist's degree in mechanics — *Moscow, Russia*

Moscow State Unviersity, Department of Mechanics and Mathematics — *Sep. 2008 - Jun. 2013*

- Thesis: "Development and validation of LOGOS software for the flows of reactive fluid."

PhD in fluid mechanics — *Moscow, Russia*

Moscow State Unviersity, Department of Mechanics and Mathematics — *Oct. 2013 - Jan. 2016*

- Unfinished. Transferred to PhD program in computer science

PhD in computer science — *Moscow, Russia*

Higher School of Economics, Faculty of Computer Science — *Jan. 2016 - PRESENT*

Research experience

Scientific research institution of system investigation, Russian Academy of Scienses — *Moscow, Russia*

Junior Researcher — *Jun. 2011 - Jan. 2015*

- Computational fluid dynamics.

Moscow State University for Pedagogics and Education, MEG Center — *Moscow, Russia*

Junior Researcher — *Feb 2015 — PRESENT*

- Applied mathematics, neuroimaging, signal processing, MEG-data analysis.

CERNEC lab., Deptartment of Psychology — *Montreal, Canada*

Visiting researcher — *Oct. 2015 — Dec. 2015*

- Internship. MEG data analysis on autistic versus controls population. Data preprocessing, machine learning, feature extraction.

CERNEC lab., Department of Psychology — *Montreal, Canada*

Visiting researcher — *May 2016 — Dec. 2017*

- Temporary position. Continued work on the autism project + supervised undergraduate student on resting-state MEG data analyses recorded from patients with schizophrenia.

Higher School of Economics, Centre for Cognition and Decision Making — *Moscow, Russia*

Research assistant — *Feb. 2017 — present*

- EEG/MEG data analysis

Skills

Programming languages

- Python
- Matlab
- Bash
- Latex

Publications

1. A. Ossadtchi, D. Altukhov, and K. Jerbi. Phase shift invariant imaging of coherent sources (PSIICOS) from MEG data. *NeuroImage*, 183, 2018

2. Zachary Yaple, Mario Martinez-Saito, Nikita Novikov, Dmitrii Altukhov, Anna Shestakova, and Vasily Klucharev. Power of feedback-induced beta oscillations reflect omission of rewards: evidence from an eeg gambling study. *Frontiers in Neuroscience*, (in press), 2018

3. Golnoush Alamian, Ana-Sofía Hincapié, Etienne Combrisson, Thomas Thiery, Véronique Martel, Dmitrii Althukov, and Karim Jerbi. Alterations of Intrinsic Brain Connectivity Patterns in Depression and Bipolar Disorders: A Critical Assessment of Magnetoencephalography-Based Evidence. *Frontiers in Psychiatry*, 8(March):1–17, 2017a

4. Golnoush Alamian, Ana Sofía Hincapié, Annalisa Pascarella, Thomas Thiery, Etienne Combrisson, Anne Lise Saive, Véronique Martel, Dmitrii Althukov, Frédéric Haesebaert, and Karim Jerbi. Measuring alterations in oscillatory brain networks in schizophrenia with resting-state MEG: State-of-the-art and methodological challenges. *Clinical Neurophysiology*, 128(9):1719–1736, 2017b

5. N.N. Smirnov, V.B. Betelin, V.F. Nikitin, L.I. Stamov, and D.I. Altukhov. Supercomputer simulations of detonation of hydrogen-air mixtures. *International Journal of Hydrogen Energy*, pages 11059–11074, 2015a

6. N.N. Smirnov, V.B. Betelin, V.F. Nikitin, L.I. Stamov, and D.I. Altukhov. Accumulation of errors in numerical simulations of chemically reacting gas dynamics. *Acta Astronautica*, pages 338–355, 2015b

7. V.B. Betelin, V.F. Nikitin, D.I. Altukhov, V.R. Dushin, and J. Koo. Supercomputer modeling of hydrogen combustion in rocket engines. *Acta Astronautica*, pages 46–59, 2012

Conference contributions

Oral presentations

MEG resting-state in autism. Approach to analysis. *Montreal, Canada*

Comprehensive training "MEG at McGill" *2015*

Globally-optimized power and shift invariant imaging of coherent sources (GO-PSIICOS) *Moscow, Russia*

Int. scientific school "Methodological problems of cortex regions functional synchronisation assessment based on MEG/EEG data" *2015*

Testing and validation of LOGOS software for hydrogen-oxygen combustion problems *Surgut, Russia*

Int. Conference "Mathematics and Information Technologies for Oil and Gas Industry" *2014*

LOGOS code for numerical simulation of reactive flows *St. Petersburg, Russia*

Nobel Prize Laureates Meeting, St. Petersburg Scientific Forum "Science and society" *2012*

Poster presentations

Oblique projection for phase shift invariant imaging of coherent sources *Philadelphia, USA*

Biomag 2018 *2018*

NeuroPycon: A python package for efficient multi-modal brain network analysis *Philadelphia, USA*

Biomag 2018 *2018*

5th Workshop on Optically-Pumped Magnetometers *Freiburg, Switzerland*

OPM versus SQUID arrays in MEG Functional Connectivity Estimation: A simulation study *2017*

Power and shift invariant imaging of coherent sources by MEG data — *Seoul, South Korea*

Biomag 2016 — *2016*

GO-PSIICOS (Globally-Optimized Power and Shift Invariant Imaging of Coherent Sources) — *San Diego, USA*

Brain Connectivity Workshop 2015 — *2015*

Honors & Awards

2017 **1-st prize**, IEEE Brain Data Bank Challenge — *St. Petersburg, Russia*