RAMIN ALLAHVERDIYEV

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EDUCATION

PhD in Physics 2025-present
University of Wisconsin-Madison

MSc in Electrical and Power Engineering 2023-2024
The George Washington University

BS in Physics 2018-2022
With Honors
Lomonosov Moscow State University
GPA: 4.94/5

RESEARCH EXPERIENCE

MHD-turbulence in plasma: self-generation of strong magnetic fields, mhd-dynamo, Earth and Sun magnetism, small- and large-scale dynamo models.

PUBLICATIONS/CONFERENCES

https://orcid.org/0000-0002-1817-1372

Publications:

E. Yushkov, **R. Allahverdiyev**, D. Sokoloff, Mean-field dynamo model in anisotropic uniform turbulent flow with short-time correlations // Galaxies, 2020
https://doi.org/10.3390/galaxies8030068

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Derivation of the Basic Magnetohydrodynamic Dynamo Equations Obtained by Averaging the Vector Potential in a Time Short-Correlated Turbulence // Geomagnetism and Aeronomy, 2023
https://doi.org/10.1134/S0016793223070034

Conference presentations:

E. Yushkov, I. Abushzada, **R. Allahverdiyev**, Magnetic traces of plasma jets of space engines // 74th International Astronautical Congress, IAC-2023
https://iafastro.directory/iac/paper/id/78176/summary/

R. Allahverdiyev, E. Yushkov, D. Sokoloff , The influence of anisotropy on the small-scale generation threshold in the Kazantsev model // XX Conference of Young Scientists "Fundamental and Applied Space Research", 2023
https://kmu.cosmos.ru/

R. Allahverdiyev, E. Yushkov, D. Sokoloff , Derivation of the basic equations of magnetohydrodynamic dynamo using vector potential averaging // XXX International Scientific Conference of Students, Postgraduate Students and Young Scientists "Lomonosov-2023", 2023
https://lomonosov-msu.ru/rus/event/8000/

R. Allahverdiyev, E. Yushkov, Local anisotropy in Parker's solar dynamo model // United Nations/Azerbaijan Workshop on the International Space Weather Initiative (ISWI), 2022
https://www.unoosa.org/oosa/en/ourwork/psa/schedule/2022/2022-iswi-workshop.html#:~:text=A%20five%2Dday%20ISWI%20workshop,with%20the%20Baku%20State%20University.

R. Allahverdiyev, E. Yushkov, D. Sokoloff, The role of the vector potential in the derivation of basic models of dynamo theory // International Baikal Youth Scientific School on Fundamental Physics "Physical Processes in Space and the Near-Earth Environment", 2022
http://bsfp.iszf.irk.ru/sites/default/files/school/2022/Preliminary%20program_2022_stand.pdf

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Local Anisotropy in the Kazantsev model // The 12th pamir International Conference on Fundamental and Applied MHD, 2022
https://eumhd.com/pamir2022/

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Using the vector potential in deriving basic mhd-dynamo models // XIX Conference of Young Scientists "Fundamental and Applied Space Research", 2022
http://kmu.cosmos.ru

R. Allahverdiyev, Derivation of basic models of dynamo theory using vector potential // XXIX International Scientific Conference of Students, Postgraduate Students and Young Scientists "Lomonosov-2022", 2022
https://lomonosov-msu.ru/rus/event/7500/

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Effects of local anisotropy in the Kazantsev model // 17th Annual Conference "Plasma Physics in the Solar System", 2022
https://plasma2022.cosmos.ru/

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Dynamo model in anisotropic uniform turbulent flow with short time correlations // IV Russian Conference on Magneto Hydrodynamics, 2021
https://conf.icmm.ru/event/1/

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Mean Field Dynamo-model in Locally Anisotropic Inhomogeneous Turbulent Flow // Week of Doctoral Students (Charles University in Prague Faculty of Mathematics and Physics), 2021
https://physics.mff.cuni.cz/wds/proc/proc-contents.php?year=2021

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Multiplicative method for averaging the magnetic induction equation in a turbulent flow // XVIII Conference of Young Scientists "Fundamental and Applied Space Research", 2021
https://kmu.cosmos.ru/

R. Allahverdiyev, Turbulent dynamo and mean-field dynamo in short-correlated turbulent flow // XXVIII International Scientific Conference of Students, Postgraduate Students and Young Scientists "Lomonosov-2021", 2021
https://lomonosov-msu.ru/archive/Lomonosov_2021/data/info.htm

R. Allahverdiyev, E. Yushkov, D. Sokoloff, Equations of mean field and turbulent dynamo using multiplicative approach // XXII Winter School on Continuum Mechanics, 2021
https://conf.icmm.ru/event/2/

E. Yushkov, **R. Allahverdiyev**, S. Kamaletdinov, D. Sokoloff, Generation of an average magnetic field in a turbulent inhomogeneous plasma flow // 16th Annual Conference "Plasma Physics in the Solar System", 2021
https://plasma2021.cosmos.ru

AWARDS

- **'Lomonosov-2021' International Scientific Conference**,
  Best presentation in the Space Physics section
  Lomonosov Moscow State University
  Title: «Turbulent dynamo and mean-field dynamo in short-correlated turbulent flow»
- **'Lomonosov-2022' International Scientific Conference**,
  Best presentation in the Space Physics section
  Lomonosov Moscow State University
  Title: «Derivation of basic models of dynamo theory using vector potential»
- **Diploma with Honors,** Lomonosov Moscow State University
- Prize-winning place in the **'CanSat Azerbaijan 2019' competition by Azercosmos**

WORK EXPERIENCE

Private tutor of Physics and Mathematics 2018-present
Self-employment, part-time

Physics and Mathematics teacher 2020-2022
Ders Evi, full-time

Founder of online-course Physon.az 2023-present
https://www.instagram.com/physon.az/

SKILLS

- Python:
  Matplotlib, pandas, SciPy, PySPEDAS, NumPy.
- C/C++
- SQL
- MATLAB
- Mathematica
- LaTeX

LANGUAGES

Russian – native
English – C1
Azerbaijani – B2