SOLAR ACTIVITY AND SPACE WEATHER

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **PhD (Candidate of Science)**

Language of study: **English**
Mode of study: **full-time**
Duration: **4 years**
Availability of free education: **yes**
Price: **375 000 RUB**

Programme curator: **Denis Ustyuzhaninov**
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Entry requirements:

- Master's degree / equivalent in a related field
- B2 level of English
- Good track record of publications related to the topic of the intended research
- Strong research proposal 1,500 - 3,500 words

Research supervisor:
Ivan Zimovets
PhD

Supervisor's research interests:
Various phenomena of solar activity, with the emphasis on the most energetic ones affecting space weather, such as solar flares, coronal mass ejections (CMEs), solar energetic particles (acceleration, radiation, transport in the corona and interplanetary space).

Research highlights:
Multiwave Solar Physics – analysis of observational data in broad spectral ranges (from gamma-rays to radio waves) from various ground-based and space observatories. Interaction with leading foreign scientists and research centers in Europe, USA, and China.

Supervisor's specific requirements:

- Strong background in plasma physics, including electrodynamics and MHD.
- Interest and experience in advanced data analysis, big data.
- Programming in IDL, Python. Supervisor's main publications:
- Zimovets I.V., Wang R., Liu Y.D., et al. Magnetic structure of solar flare regions producing hard X-ray pulsations // J. Atm. Sol.-Terr. Phys., 174, 2018.
- Zimovets I.V., Nakariakov V.M. // Excitation of kink oscillations of coronal loops: statistical study. Astron. & Astrophys., 577, 2015.
- Zimovets I., Vilmer N., Chian A.C.-L., et al. Spatially resolved observations of a split-band type II radio burst // Astron. & Astrophys., 547, 2012.
- Nakariakov V.M., Zimovets I.V. Slow Magnetoacoustic Waves in Two-Ribbon Flares // Astrophys. J. Lett., 730, 2, L27, 2011.

Specializations within this programme