

# Mykhailo (Michael, Misha) Rashkovetskyi

PhD student in astrophysics  
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## Fields of interest

Theoretical astrophysics: plasma and high energy, cosmology; quantum field theory.

## Education

- **Harvard University** Cambridge, Massachusetts, US  
*Ph.D. in Astronomy* 2020 – 2026  
– Harvard-Smithsonian Center for Astrophysics
- **Tel Aviv University** Tel Aviv-Yafo, Israel  
*B.Sc. in Physics, Summa Cum Laude (GPA: 98/100)* 2019 – 2020  
– Raymond & Beverly Sackler School of Physics & Astronomy  
– Advisor: Dr. Omer Bromberg
- **Moscow Institute of Physics and Technology** Dolgoprudny, Russia  
*B.Sc. in Physics, unfinished* 2015 – 2018  
– Department of General and Applied Physics  
– Advisor: Prof. Vasily Beskin
- **Richelieu Lyceum** Odesa, Ukraine  
*High school, specialization in physics* 2010 – 2015

## Research topics and publications

- The dynamics of highly magnetized jets propagating in the medium
- Orthogonal radiopulsars and their statistics
  - E. M. Novoselov, V. S. Beskin, A. K. Galishnikova, M. M. Rashkovetskyi, and A. V. Biryukov. Orthogonal pulsars as a key test for pulsar evolution. *MNRAS*, 494(3):3899–3911, April 2020
- Pulsar losses mechanisms
  - M. M. Rashkovetskyi, V. S. Beskin, A. K. Galishnikova, E. M. Novoselov, and A. A. Philippov. Separatrix current as a key subject of pulsar slowing-down – is being prepared for publication
  - V. S. Beskin, A. K. Galishnikova, E. M. Novoselov, A. A. Philippov, and M. M. Rashkovetskyi. So how do radio pulsars slow-down? In *Journal of Physics Conference Series*, volume 932, page 012012, December 2017
- Pulsar radiation propagation

- H. L. Hakobyan, A. A. Philippov, V. S. Beskin, A. K. Galishnikova, E. M. Novoselov, and M. M. Rashkovetskiy. On the Light-Curve Anomalies of Radio Pulsars. In *Astronomical Society of the Pacific Conference Series*, volume 515, page 295, August 2018
- H. L. Hakobyan, A. A. Philippov, V. S. Beskin, A. K. Galishnikova, E. M. Novoselov, and M. M. Rashkovetskiy. On the light-curve anomalies of radio pulsars. In *Journal of Physics Conference Series*, volume 932, page 012018, December 2017

## Schools, conferences and practices

- **15th School of Modern Astrophysics** Dolgoprudny, Russia  
*Moscow Institute of Physics and Technology* July 1-12, 2019
- **Physics of Neutron Stars - 2017** Saint-Petersburg, Russia  
*Ioffe Institute, Sternberg Astronomical Institute* July 10-14, 2017
- **13th School of Modern Astrophysics** Dolgoprudny, Russia  
*Moscow Institute of Physics and Technology* July 3-21, 2017
- **International School of Subnuclear Physics - 2017** Erice, Italy  
*"Ettore Majorana" Foundation and Centre for Scientific Culture* June 14-23, 2017
- **International school on particles, fields and strings** Moscow, Russia  
*National Research University "High School of Economics"* April 17-24, 2017
- **Astronomical practice** Nizhniy Arkhyz, Russia  
*Special Astrophysical Observatory* June 25 – July 2, 2016

## Awards, grants and honors

Stipend for excellent students of MIPT in the name of A.Abramov . . . . . 2016–2017  
 International Physics Olympiad, bronze medal . . . . . Mumbai, 2015  
 International Physics Olympiad, silver medal . . . . . Astana, 2014

## Knowledge and skills

- **Physics:** classical and quantum mechanics, thermodynamics, classical field theory, general relativity, main cosmology models, basics of statistical physics, hydrodynamics, plasma physics, quantum theory principles and paradoxes
- **Mathematics:** calculus, complex analysis, probability and statistics, PDEs and Green functions, special functions, asymptotic analysis
- **Numerical methods:** Monte-Carlo, Particle in cell, Godunov schemes
- **Programming:** Python, C/C++, Fortran
- **Technology:** L<sup>A</sup>T<sub>E</sub>X, Jupyter notebook, GNU/Linux, git

## Languages

- **Russian:** mother tongue
- **Ukrainian:** fluent
- **English:** advanced
- **Hebrew:** advanced
- **German:** intermediate