Michael (Misha, Mykhailo) Rashkovetskyi

PhD student in astrophysics
Ofc P-302, 60 Garden St, Cambridge, MA, 02138

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mrashkovetskyi@cfa.harvard.edu
`https://rashkovetsky.im`

Fields of interest

Cosmology, plasma and high energy astrophysics; quantum field theory.

Education

- **Harvard University** — Cambridge, Massachusetts, US
  Ph.D. in Astronomy — *2020 – 2025*
  M.A. in Astronomy and Astrophysics, in passing — *2022*
  - Center for Astrophysics | Harvard & Smithsonian
  - Advisor: Prof. Daniel Eisenstein

- **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 Applied Mathematics and 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

- Semi-analytical, semi-empirical covariance matrices for DESI with `RascalC` code
  - Jeongin Moon, David Valcin, Michael Rashkovetskyi, Christoph Saulder, et al. First Detection of the BAO Signal from Early DESI Data. *arXiv e-prints*, art. arXiv:2304.08427, April 2023. doi:10.48550/arXiv.2304.08427. arXiv:2304.08427 (submitted to MNRAS)
  - Michael Rashkovetskyi, Daniel J. Eisenstein, et al. Validation of semi-analytical, semi-empirical covariance matrices for two-point correlation function for early DESI data. MNRAS, 524(3): 3894–3911, September 2023. doi:10.1093/mnras/stad2078. arXiv:2306.06320
- Double-squeezed 4-point correlation function and squeezed 3-point correlation function
- Inhomogeneous recombination relieving Hubble tension
  - Michael Rashkovetskyi, Julian B. Muñoz, Daniel J. Eisenstein, and Cora Dvorkin. Small-scale clumping at recombination and the Hubble tension. Phys. Rev. D, 104(10):103517, November 2021. doi:10.1103/PhysRevD.104.103517. arXiv:2108.02747
- 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. doi:10.1093/mnras/staa904. arXiv:2004.03211
- Pulsar losses mechanisms
  - 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. doi:10.1088/1742-6596/932/1/012012
- Pulsar radiation propagation
  - H. L. Hakobyan, A. A. Philippov, V. S. Beskin, A. K. Galishnikova, E. M. Novoselov, and M. M. Rashkovetskyi. 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. Rashkovetskyi. On the light-curve anomalies of radio pulsars. In *Journal of Physics Conference Series*, volume 932, page 012018, December 2017. doi:10.1088/1742-6596/932/1/012018

Teaching experience

- **Astronomy 200: Radiative Processes in Astrophysics** — Harvard University
  Teaching Fellow — *Fall 2023*
- **Astronomy 201: Astrophysical Fluids & Plasmas** — Harvard University
  Teaching Fellow — *Spring 2023*
- **Astronomy 130: Introduction to Cosmology** — Harvard College
  Teaching Fellow — *Fall 2022*

Schools, conferences and practices

- **DESI December** — Waikoloa, HI, USA
  DESI Collaboration — *December 11-14, 2023*
- **DESI July** — Durham, UK
  DESI Collaboration — *July 17-21, 2023*
- **Michigan Cosmology Summer School** — Ann Arbor, MI, USA
  University of Michigan — *June 5-9, 2023*
- **APS April** — Minneapolis, MN, USA
  American Physical Society — *April 15-18, 2023*
- **DESI December** — Cancun, Mexico
  DESI Collaboration — *December 5-9, 2022*
- **VIII Essential Cosmology for the Next Generation** — Playa del Carmen, Mexico
  "Cosmology on the Beach" — *November 30 - December 3, 2022*
- **DESI June** — Berkeley, CA, USA
  DESI Collaboration — *June 21-24, 2022*

- **CMB-S4 Summer Meeting** — online
  CMB-S4 Collaboration — *August 9-13, 2021*
- **CMB-S4 Spring Meeting** — online
  CMB-S4 Collaboration — *March 8-12, 2021*
- **15th School of Modern Astrophysics** — Dolgoprudny, Russia
  Moscow Insitute 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 Insitute 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

Dean's Certificate in Recognition of Outstanding Academic Achievements (TAU) 2019–2020
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

Languages

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