

Dr. Mikhail Korobko

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Personal Information

Name: Mikhail Korobko

Born: June 18, 1990, Krasnogorsk, Moscow Region, USSR

Current employment: Institute for Quantum Physics, University of Hamburg, Hamburg, Germany

Highest degree: Dr.rer.nat., University of Hamburg, Hamburg, Germany

Education

PhD in quantum optics and gravitational-wave detection, *summa cum laude* 2014–2020

University of Hamburg, Institute for Laser Physics

Title of the dissertation: "*Taming the quantum noise: How quantum metrology can expand the reach of gravitational-wave observatories*"

Supervisor: Prof. Dr. Roman Schnabel

Specialist degree* in physics, *summa cum laude* 2007–2013

M.V.Lomonosov Moscow State University, Faculty of Physics

Title of the thesis: "*Adaptive quantum measurements for gravitational-wave detectors*"

Supervisor: Prof. Dr. Farid Khalili

*Specialist degree is officially equivalent to a joint bachelor & master degree in Germany

Research Fellow July – August 2013

California Institute of Technology

LIGO SURF 2013 Research Fellow

Research Fellow June – August 2012

California Institute of Technology

LIGO SURF 2012 Research Fellow

Moscow High School #1199 2002–2007

Moscow, Russia

Krasnogorsk Lyceum #4 2000–2002

Krasnogorsk, Moscow region, Russia

Krasnogorsk Gymnasium #2 1997–2000

Krasnogorsk, Moscow region, Russia

Employment history

University of Hamburg Permanent researcher
Institute of Quantum Physics January 2022–Present

University of Hamburg Researcher
Institute of Laser Physics June 2016–December 2020

University of Hamburg EU Researcher
Institute of Laser Physics December 2014–May 2016

University of Hamburg Researcher
Institute of Laser Physics September 2014–November 2014

Teaching experience

- Supervisor of the Advanced Physics practicum at the University of Hamburg - 2017–present
- Supervisor of the seminars for the lecture series Physik VI at the University of Hamburg - 2019–present
- Astronomy teacher for the 7th grade children at Moscow High School #1199, 2010-2013

Awards

- 2024 Rudolf Kaiser Prize for special scientific achievements in the field of experimental physics

As a part of LIGO Scientific Collaboration

- 2016 Special Breakthrough Prize in Fundamental Physics for the observation of gravitational waves, opening new horizons in astronomy and physics.
- 2016 Gruber Cosmology Prize
- 2016 National Space Club Distinguished Science Award
- 2017 Bruno Rossi Prize
- 2017 Royal Astronomy Society Group Achievement Award
- 2017 Princess of Asturias Award for Technical and Scientific Research
- 2017 Einstein Medal

Other

- Gold medal for special achievements in studies, Lomonosov Moscow State University (2014)
- Caltech Summer Undergraduate Research Fellowship (2012, 2013)
- Special Honours Russian Government stipend (2011,2012,2013)

Funding

- 2022-2024 – PIER Seed grant, "Low-frequency mechanical oscillators under temperature gradients"

Academic activities

- Key researcher at the Hamburg Excellence Cluster "Quantum Universe"
- Elected chair of LIGO quantum noise working group (since 2023)
- Elected co-chair of LIGO Academic Advisory Council (since 2022)
- Elected co-chair of Einstein Telescope "Observatory design and noise budget" working package (since 2023)
- Founder and coordination general of Gravitational-wave Early Career Scientists organization (GWECS)
- Referee for the Nature Communications, Light: Science & Communications, APS journals (PRL, PRA, PRR, RPX), Optica, European Physical Journal
- Co-organizer of the "Workshop on Gravitational Wave Astrophysics for Early Career Scientists", Lorentz Center, May 2021
- Co-organizer of the "Amaldi 16" conference and early career workshop, Glasgow, UK, 2025
- Co-organizer of the "TAUP 2025" conference, Xichang, China, 2025
- Co-organizer of 6 LIGO-Virgo-KAGRA collaboration meetings
- Student at the 2015 Les Houches Summer School on Quantum optomechanics and Nanomechanics

- o Scientific editor of Russian editions of books on quantum technology and programming:
 - E. Johnston et al., "Programming Quantum Computers", ISBN: 9781492039686;
 - V. Silva, "Practical Quantum Computing for Developers: Programming Quantum Rigs in the Cloud using Python, Quantum Assembly Language and IBM QExperience", ISBN: 978-5-4461-1429-0;
 - M. Gimeno-Segovia et al., "Programming Quantum Computers: Essential Algorithms and Code Samples", ISBN: 978-5-4461-1531-0;
 - P. Orland, "Math for Programmers: 3D Graphics, Machine Learning, and Simulations with Python" ISBN: 978-5-4461-2287-5.

Professional membership

- o Deutsche Physikalische Gesellschaft
- o LIGO Scientific Collaboration (LSC), 2012–present
- o Einstein Telescope Collaboration, Instrument Science board
- o LSC Quantum Noise Working group
- o LSC Advanced Interferometer Configuration working group
- o LSC GEO 600 interferometer group
- o Center in Hamburg for astro-,mathematical and particle physics (CHAMPP)