

Tina Kahniashvili Curriculum Vitae

Personal Data

Contact Information

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Education & Training

- 2000: Doctor of Sciences (*Habilitation*) in Physical and Mathematical Sciences,
Thesis: “*Cosmic Microwave Background Anisotropies and Large Scale Structure Formation*”
Lebedev Physics Institute (FIAN) of Russian Academy of Sciences, Russia
- 1999: Senior Doctorate Fellowship at Astro-Space Center of Russian Academy of Sciences
- 1988: Ph.D. in Physics, Space Research Institute of Russian Academy of Sciences, Russia
Thesis “*Gravitational Instability in the Universe with Weakly Interacting Particles*”
Supervisors: Profs. V.N. Lukash and I. D. Novikov,
- 1984: M.S. in Physics with High Honor (Theoretical Physics), Tbilisi State University, Georgia
Thesis “Gauge Invariant Theory of Gravitational Perturbations”
Supervisor: Prof. V.N. Lukash, completed through Student Research (Diploma)
Fellowship at Space Research Institute (IKI) Russian Academy of Sciences, Russia
- 1984: B.S. in Physics with High Honor (Theoretical Physics), Tbilisi State University, Georgia
- 1983: B.S. in Physics with High Honor (Physics Education), Tbilisi State University, Georgia

Affiliations

Current Positions

- 2013 (Jul) – present: Associate research professor, Carnegie Mellon University, USA
- 2010 (Oct) – present: Professor of physics and astronomy, Ilia State University, Georgia
- 2007 (Jan) – present: Main scientist, Abastumani Astrophysical Observatory, Georgia

Previous Positions

- 2008 – 2010: Associate professor, Department of Physics, Ilia State University, Georgia
- 2006 – 2008: Research scientist, CCPP, New York University, USA
- 2005 – 2006: Associate research professor, Department of Physics, Kansas State University, USA
- 2003 – 2005: Research associate, Department of Physics, Kansas State University, USA
- 2002 – 2007: Leading staff scientist, Abastumani Astrophysical Observatory, Georgia
- 1993 – 2002: Senior research-scientist, Abastumani Astrophysical Observatory, Georgia
- 1988 – 1993: Researcher, Abastumani Astrophysical Observatory, Georgia

Visiting Positions

- 2010 – 2012: Visiting research professor, Carnegie Mellon University, USA
- 2009 – 2010: Visiting professor, Department of Physics, Carnegie Mellon University, USA
- 2007 – 2008: Visiting professor, Department of Physics, Kansas State University, USA
- 2006 – 2021: Adjunct professor, Department of Physics, Laurentian University, Canada
- 2000 – 2002: Visiting professor, Department of Physics and Astronomy, Rutgers University, USA
- 1998 – 2000: Visiting scientist, Department of Physics, Geneva University, Switzerland
- 1996 – 1998: Visiting scientist, SISSA, Italy
- 1996 – 1997: Visiting scientist, International Center for Theoretical Physics, Italy

Memberships

American Physical Society, American Astronomical Society, International Astronomical Union

Language Knowledge

English, French, Russian, Georgian (native)

Research Interests

Theoretical Cosmology

Cosmic Microwave Background; Fundamental Symmetries Tests; Early Universe (Generation of Perturbations); Gravitational Waves; Cosmological Magnetic Fields; Large-Scale Structure Formation; Neutrinos in Cosmology; Dark Energy and Dark Matter Interactions; Modified Gravity

Astro-particle Physics/High Energy Astrophysics/Fluid Dynamics

Cosmic Magnetic Fields; Hydro and MHD Turbulence; Gamma Ray Bursts; Cosmic Rays

Awards and Fellowships

2014 – 2021: Senior Associate Membership, International Center for Theoretical Physics (ICTP), Italy

2013: American Physical Society, Outstanding Referee, USA

2013: Berkman Foundation for research project “New Physics at Hubble Horizon Scales”, USA

2006 – 2013: Regular Associate Membership, International Center for Theoretical Physics (ICTP), Italy

2006 – 2007: James Arthur Fellowship, CCFP, New York University, USA

2000 – 2001: COBASE NSF, Visiting Scientist Fellowship, Rutgers University, USA

Grants (last 10 years)

Principal Investigator: NASA Astrophysics Theory (USA)

“Gravitational Waves as a Probe of the Early Universe”, 2022-2025

Co-Investigator: Georgian National Science Foundation (Georgia)

“Testing Beyond the Standard Model of Cosmology: Fundamental Symmetries and Gravity”, 2019-2022

PI: Michael Maziashvili

Co-Investigator: Swedish National Council (Sweden)

“Stochastic Gravitational Waves from the Early Turbulent Universe”, 2019-2023 PI: Axel Brandenburg

Principal Investigator: Georgian National Science Foundation (Georgia)

“Cosmic Magnetic Fields and Gravitational Waves”, 2019-2022

Principal Investigator, National Science Foundation, Astronomy and Astrophysics (USA),

“Collaborative Research: A Comprehensive Theoretical Study of Cosmic Magnetic Fields: Their Origin, Evolution, and Signatures”, 2016-2019

Principal Investigator, Georgian National Science Foundation (Georgia)

“Magnetic Fields in the Universe: Origin, Evolution, and Signatures”, 2015 – 2018

Co-Principal Investigator, Georgian National Science Foundation (Georgia)

“Testing Modified Gravity through Large-Scale Structure Observations”, 2015 – 2018 PI: Lado Samushia

Principal Investigator, Georgian team leader, Scientific Co-operation Program between Eastern Europe and Switzerland (SCOPES); Joint research project “Cosmological Magnetic Fields: Origin, Evolution, and Signatures”, 2014 – 2018 Leading PI: Ruth Durrer

Principal Investigator, National Science Foundation, Astronomy & Astrophysics (USA)

“Collaborative Research: “Cosmic Magnetic Fields: Origin, Evolution, and Signatures”, 2011-2015

Principal Investigator, Berkman Foundation, CMU

Research project: “New Physics at Hubble Horizon Scales”, 2014-2015

Principal Investigator, NASA Astrophysics Theory (USA)

“Probing Cosmological Symmetry Breaking with the Cosmic Microwave Background”, 2010-2012

Principal Investigator, Georgian team leader, Scientific Co-operation Program between Eastern Europe and Switzerland (SCOPES); “Testing Fundamental Physics with Cosmology, 2009 - 2012

Leading PI: Mikhail Shaposhnikov

Principal Investigator, Georgian National Science Foundation

“Cosmological Signatures of Symmetry Breaking in the Early Universe”, 2009 – 2012