MILOS SZTIPANOV, PhD

Physicist

CONTACTS

Washington D.C.
milostipanov@gmail.com
meteorids.github.io
USA citizen
Selective service

TECHNICAL SKILLS

High Performance Computing, Machine Learning, Python, FORTRAN, Bash, Git, Unix, LaTeX, AccuRT, RRTM, Soldering, MacOS, Linux.

LANGUAGES

English	Fluent
Hungarian	Fluent
Russian	Intermediet proficiency

PROFILE

My research background includes radiative transfer, atmospheric physics, biophysics, and sequence alignment algorithms. Since completing my B.Sc., I have specialized in radiation transfer in the atmosphere, utilizing theoretical and computational tools, including coding, high-performance computing, and machine learning. In my latest role, I improved the radiation scheme in NOAA's weather models, developed a new method for calculating heating rates, and worked on developing a neural network to replace gas optics in the physical model.

EDUCATION

Stevens Institute of Technology /USA/ 2015 - 2023
Assistantship program provided by the university. Completed M.Sc. and Ph.D. under the supervision of Prof. Knut Stamnes. Roles included Laboratory Supervisor, Teaching Assistant, and Research Assistant.

Eötvös Lóránd Science University /HUN/ 2008 - 2012
Bachelor's Degree in physics with a theoretical physics concentration.

Reformed High School of Sárospatak /HUN/ 2004 - 2008
Focus on Math, Physics, and Biology. Research on photosynthesis inhibitor compounds.

RELATED EXPERIENCE

PHYSICAL SCIENTIST
Lynker - NOAA, College Park, MD, USA 2024 - present
National Oceanic and Atmospheric Administration
/National Weather Service/NCEP/MDC
Improving the radiation scheme in Unified Forecast System applications through theoretical and computational methods, including HPC, and machine learning. Proposed a novel method for calculating heating rates.

RESEARCH ASSOCIATE
University of Maryland, Collage Park, MD, USA 2024
Research associate at University of Maryland.

ADJUNCT PROFESSOR
Kean University, Union, NJ, USA 2023
Teaching Statistics for the Department of Mathematics and General Physics.

LABORATORY SUPERVISOR
Stevens Institute of Technology, Hoboken, NJ, USA 2023
Supervised seven teaching assistants and managed the Physics Educational Laboratory.

RESEARCH / TEACHING ASSISTANT / LABORATORY INSTRUCTOR
Stevens Institute of Technology, Hoboken, NJ, USA 2015 - 2023
Research in radiative transfer and atmospheric physics. Taught four different courses: General Physics, Mechanics, Electromagnetism, and Physics Laboratory for Scientists.

INSTRUMENT TESTING FOR BALLOON-BORN RADIATION MEASUREMENTS
New Jersey, USA 2015
Tested the NILU Cube instrument before deployment in Colorado.

PERSONAL TUTOR IN PHYSICS AND MATHEMATICS
Budapest, Hungary 2009 - 2015
Prepared high school students for state exams and matriculation.

CONTACTS

Washington D.C.
milostipanov@gmail.com
meteorids.github.io
USA citizen
Selective service

RECENT PUBLICATIONS & CONFERENCES

Sztipanov M.; Kindervatter T.; Stamnes S.; Hu Y.; Zeng X.; Tanikawa T.; Yang F.; Stamnes K.
Accurate and computationally efficient method for atmospheric heating rate computations (2025), Journal of Advances in Modeling Earth Systems, [pre-print].

American Meteorological Society Annual Meeting - Speaker, New Orleans (2025).

Sztipanov, M.; Krizsán, L.; Li, W.; Stamnes, J.J.; Svendby, T.; Stamnes, K.
Machine Learning-Based Retrieval of Total Ozone Column Amount and Cloud Optical Depth from Irradiance Measurements, Atmosphere (2024).

Milos Sztipanov, Wei Li, Arne Dahlback, Jakob Stamnes, Tove Svendby, Knut Stamnes
New method for retrieval of aerosol optical depth from multichannel irradiance measurements, Optics Express (2023).

Milos Sztipanov
Methods of ozone amount, cloud and aerosol optical depth from ground-based irradiance measurements, Dissertation (2023).

International Radiation Symposium - Speaker, Thessaloniki, Greece (2022).

Milos Sztipanov, Lubna Tumeh, Wei Li, Tove Svendby, Arve Kylling, Arne Dahlback, Jakob J. Stamnes, Georg Hansen, and Knut Stamnes, *Ground-based measurements of total ozone column amount with a multichannel moderate-bandwidth filter instrument at the Troll research station, Antarctica*, Appl. Opt. 59, 97-106 (2020).