

CURRICULUM VITAE

Name: Alexander G. Tevzadze

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Professional Preparation:

- 2006, Ph.D. Centre for Mathematical Plasma Astrophysics, Katholieke Universiteit Leuven, Belgium
Ph.D. Thesis: *“Velocity shear induced phenomena in solar and astrophysical flows”*,
Supervisors: Marcel Goosens, George Chagelishvili
- 1995, M.Sc. Theoretical Physics (Astrophysics)
Faculty of Physics, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

Work Experience:

- 2009-current Associate Professor
Department of Physics, Faculty of Exact and Natural Sciences,
Tbilisi State University, Tbilisi, Georgia
- 2012-current Visiting Associate Professor
Department of Physics, Carnegie Mellon University, Pittsburgh, USA
- 2015-current Researcher
Abastumani Astrophysical Observatory, Ilia State University, Tbilisi, Georgia
- 2007-2011 Associate Researcher
Abastumani Astrophysical Observatory, Ilia State University, Tbilisi, Georgia
- 2007-2009 Invited Lecturer
Faculty of Exact and Natural Sciences, Tbilisi State University, Tbilisi, Georgia
- 2007-2007 Visiting Fellow
Meudon Observatory, Observatoire de Paris, Paris, France
- 2005-2007 Research Assistant
Department for Extragalactic Astronomy, Osservatorio Astronomico di Torino, Italy
- 2003-2007 Research Scientist
Center for Plasma Astrophysics, Abastumani Astrophysical Observatory, Georgia
- 1998-2003 Junior Research Scientist
Abastumani Astrophysical Observatory, Tbilisi, Georgia
- 1995-1998 Research Fellow
Department of Cosmogeophysics, Space Research Institute, Moscow, Russia

Administrative:

- 2015-current Chair of the Editorial Board – Section of Physics,

2014-2015 Faculty of Exact and Natural Sciences, Tbilisi State University, Tbilisi, Georgia
Vice Dean,
2012-2016 Faculty of Exact and Natural Sciences, Tbilisi State University, Tbilisi, Georgia
Scientific Secretary of the Dissertation Council,
Faculty of Exact and Natural Sciences, Tbilisi State University, Tbilisi, Georgia

Teaching:

B.Sc. courses: Introduction to Physics (2010-2015, fall, TSU)
Evolution of the Universe (2009-2017, spring/fall, TSU)
Electrodynamics of Continuous Medium (2012, 2016, 2017 spring, TSU Physics)
Hydrodynamics (2016, 2017, spring, TSU Physics)
Theory of Electromagnetism (2010-2011, fall, TSU EEE)

M.Sc. courses: Numerical Simulations in Astrophysics (2009-2017, fall/spring, TSU Physics)
Astrophysical Flows (2011, 2016, fall, TSU Physics)
Physics of Compact Objects (2009 spring, 2012 spring, TSU Physics)

Supervising: tevza.org/home/course/Diploma
B.Sc.: L. Poniatovski (2015), S. Mchedlidze (2015), N. Matchavariani (2015),
L. Tsiskarishvili (2013), D. Gogichaishvili (2012);
M.Sc.: D. Javrishvili (2013), S. Lomineishvili (2010), E. Uchava (2008);
S. Mchedlidze (2016), L. Poniatowski (2016).
Ph.D.: E. Uchava (2012-);

Referee: Physical Review D, E, Letters.

Expert of: Latvian Council of Science, National Centre for Research and Development, Poland.

Awards:

2009 – Eugenie Kharadze Prize in Astrophysics, Georgian National Academy of Sciences, Georgia

Languages: Georgian (native), English, Russian (fluent), Dutch, Italian (beginner).

Research Interests:

Dynamics of Accretion and Protoplanetary Disks, HD and MHD Shear Flows, Turbulence, Numerical Simulation of Astrophysical Flows, Aeroacoustics, Rheological Flows in Astrophysics; Effects of Pressure/Temperature anisotropy in weakly collisional flows; DM halo in galaxies and Jeans instability, Cosmological Magnetic Fields;

Research Grants:

2016-2019 *Collaborative Research: A Comprehensive Theoretical Study of Cosmic Magnetic Fields, their Origin, Evolution, and Signatures*
National Science Foundation (NSF) AST-1615100, Role: Collaborator

2015-2018 *Magnetic Fields in the Universe*
Rustaveli National Science Foundation grant FR/264/6-350/14. Role: Senior Researcher

- 2014-2017 *Observational signatures and dynamics of cosmic MHD turbulence*
Swiss National Science Foundation SCOPES IZ7370-152581, Role: Collaborator.
- 2011-2015 *Solar and Space Weather Network of Excellence*
European Commission FP7-PEOPLE-2010-IRSES-269299, Role: Participant.
- 2011-2013 *Cosmic Magnetic Fields: Origin, Evolution, and Signatures*
National Science Foundation (NSF) AST-1109180, Role: International Collaborator.
- 2009-2011 *Dynamics of Radially and Vertically Stratified Differentially Rotating Astrophysical Disks*
Georgian National Science Foundation grant GNSF08/4-420, Role: Principal Investigator.
- 2009-2012 *Testing Fundamental Constants with Cosmology*
Swiss National Science Foundation (SNSF) SCOPES 128040, Role: Participant.
- 2007-2008 *Vortex Model of the Planet Formation: Generation of Vortices, Angular Momentum Transfer and Nonlinear Dynamics*
Georgian National Science Foundation (GNSF) grant Pres07-153, Role: Principal Investigator.
- 2006-2009 *Vortices, Waves, Fronts in Rotating Fluids: Adjustments, Stability, Frontogenesis*
International Science and Technology Center grant ISTC G-1217, Role: Participant.
- 2003-2005 *Sound Generation in Atmospheric Shear Flows*
Civil Research and Development Foundation (CRDF) grant #3315, Role: Participant.
- 2002-2005 *Vortices in Rotating Shear Flows: Theoretical and Experimental Investigation*
International Science and Technology Center (ISTC) grant #G-553, Role: Participant.

Selected Publications:

Total Number of Publications: 45, Citations: 806, H-index: 17 (Google Scholar).

- Brandenburg, A., Kahniashvili, T., Tevzadze, A. G., “*Nonhelical Inverse Transfer of a Decaying Turbulent Magnetic Field*”, *Phys. Rev. Letters* **114**, 075001 (2015).
- Kahniashvili, T. Tevzadze, A. G. Brandenburg, A. Neronov, A., “*Evolution of primordial magnetic fields from phase transitions*”, *Phys. Rev. D.*, **87**, 3007 (2013).
- Tevzadze, A. G. Kisslinger, L. Brandenburg, A. Kahniashvili, T., “*Magnetic Fields from QCD Phase Transitions*”, *Astrophys. J.* **759**, 54 (2012).
- Tevzadze, A. G. Chagelishvili, G. D. Bodo, G. Rossi, P., “*Linear coupling of modes in two-dimensional radially stratified astrophysical discs*”, *Mon. Not. Roy. Astr. Soc.* **401**, 901 (2010).
- Tevzadze, A. G. Chagelishvili, G. D. Zahn, J.-P., “*Hydrodynamic stability and mode coupling in Keplerian flows: local strato-rotational analysis*”, *Astron. Astrophys.* **478**, 9 (2008).
- Chagelishvili, G. D. Zahn, J.-P. Tevzadze, A. G. Lominadze, J. G., “*On hydrodynamic shear turbulence in Keplerian disks: Via transient growth to bypass transition*”, *Astron. Astrophys.* **402**, 401 (2003).
- Tevzadze, A. G. Chagelishvili, G. D. Zahn, J.-P. Chanishvili, R. G. Lominadze, J. G., “*Transient growth of small-scale 3D vortex mode perturbations*”, *Astron. Astrophys.* **407**, 779 (2003).
- Chagelishvili, G. D. Tevzadze, A. G. Bodo, G. Moiseev, S. S., “*Linear Mechanism of Wave Emergence from Vortices in Smooth Shear Flows*”, *Phys. Rev. Letters* **79**, 3178 (1997).