



Gia Avalishvili

Associate Professor

Numerical Analysis and Computational Technologies

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Education:

- **Bachelor of Mathematics, Ivane Javakhishvili Tbilisi State University**
- **Master of Informatics, Ivane Javakhishvili Tbilisi State University**
- **Ph.D., in Differential Equations, Ivane Javakhishvili Tbilisi State University**
- **Doctor (Habilitation), in Theoretical Foundations of Mathematical Modeling, Numerical Methods, Program Complexes, Ivane Javakhishvili Tbilisi State University**

Teaching Courses:

- **Bases of Mathematical Modeling**
- **Methods of Functional Analysis in Computational Mathematics**
- **Mathematical Theory of Elasticity**
- **Numerical Mathematics**
- **Numerical Methods for Partial Differential Equations**
- **Linear Algebra and Analytical Geometry**
- **Calculus for Natural Sciences**
- **Calculus for Computer Sciences**
- **Advanced Mathematics 2 - Differential Models in Chemistry, Biology, and Life Sciences**
- **Theory of Functions of Complex Variable**
- **Mathematics for Economists**
- **Database Management Systems**

Research Interests:

- **Construction and investigation of dimensional reduction algorithms**
- **Investigation of nonclassical models of thermoelastic bodies**
- **Investigation of nonlocal problems**
- **Investigation of multi-time evolution problems**
- **Investigation of problems of exact controllability**

Running Projects:

- **Construction and investigation of hierarchical models for thermoelastic piezoelectric structures (SRNSF)**

Selected Publications:

1. G. Avalishvili, M. Avalishvili, W.H. Müller, On the well-posedness of the Green-Lindsay model, *Math. and Mech. of Complex Systems*, vol. 5, 2017, № 2, 115-125;
2. G. Avalishvili, M. Avalishvili, Nonclassical problem for ultraparabolic equation in abstract spaces, *Journal of Function Spaces*, vol. 2016, 1-15;
3. G. Avalishvili, M. Avalishvili, On a nonlocal problem for an abstract ultraparabolic equation, *Bull. Georgian Natl. Acad. Sci.*, vol. 9, 2015, № 3, 37-42;
4. G. Avalishvili, M. Avalishvili, D. Gordeziani, On the investigation of dynamical hierarchical models of elastic multi-structures consisting of three-dimensional body and multilayer substructure, *Bull. Georgian Natl. Acad. Sci.*, vol. 8, 2014, № 3, 20-31;
5. G. Avalishvili, M. Avalishvili, On approximation of Lord-Shulman model for thermoelastic plates with variable thickness by two-dimensional problems, *Bull. Georgian Natl. Acad. Sci.*, vol. 8, 2014, № 2, 4-14;
6. G. Avalishvili, M. Avalishvili, D. Gordeziani, Investigation of static two-dimensional models for thermoelastic prismatic shells with microtemperatures, *Bull. Georgian Natl. Acad. Sci.*, vol. 7, 2013, № 3, 20-30;
7. G. Avalishvili, M. Avalishvili, On hierarchical models of prismatic shells within the framework of the Chandrasekharaiah-Tzou nonclassical theory of thermoelasticity, *Bull. Georgian Natl. Acad. Sci.*, vol. 7, 2013, № 2, 33-44;
8. G. Avalishvili, M. Avalishvili, B. Miara, Nonclassical problems with nonlocal initial conditions for second-order evolution equations, *Asymptotic Analysis*, vol. 76, 2012, 171-192;
9. G. Avalishvili, M. Avalishvili, On nonclassical problems for first-order evolution equations, *Georgian Math. J.*, vol. 18, 2011, 441-463;
10. G. Avalishvili, M. Avalishvili, D. Gordeziani, On a nonlocal problem with integral boundary conditions for multidimensional elliptic equation, *Appl. Math. Letters*, vol. 24, 2011, № 4, 566-571;
11. G. Avalishvili, M. Avalishvili, D. Gordeziani, B. Miara, Hierarchical modeling of thermoelastic plates with variable thickness, *Anal. Appl.*, vol. 8, 2010, № 2, 125-159;
12. D. Gordeziani, M. Avalishvili, G. Avalishvili, Dynamical two-dimensional models of solid-fluid interaction, *Journal of Mathematical Sciences*, vol. 157, 2009, № 1, 16-42;
13. G. Avalishvili, M. Avalishvili, On time nonlocal problems for some nonlinear evolution equations, *Bull. Georgian Acad. Sci.*, vol. 2, 2008, № 4, 14-18;
14. G. Avalishvili, M. Avalishvili, D. Gordeziani, On dynamical three-dimensional fluid-solid interaction problem, *Georgian Math. J.*, vol. 15, 2008, № 4, 601-618;
15. D. Gordeziani, G. Avalishvili, M. Avalishvili, Hierarchical models of elastic shells in curvilinear coordinates, *An International Journal Computers & Mathematics with Applications*, vol. 51, 2006, 1789-1808;
16. D.G. Gordeziani, G.A. Avalishvili, Time-nonlocal problems for Schrödinger type equations: I. Problems in abstract spaces, *Diff. Eq.*, vol. 41, № 5, 2005, 703-711;
17. D.G. Gordeziani, G.A. Avalishvili, Time-nonlocal problems for Schrödinger type equations: II. Results for specific problems, *Diff. Eq.*, vol. 41, № 6, 2005, 852-859;
18. D. Gordeziani, G. Avalishvili, On a dynamical hierarchical model for prismatic shells in the theory of elastic mixtures, *Math. Meth. Appl. Sci.*, vol. 28, 2005, 737-756;
19. D. Gordeziani, G. Avalishvili, Investigation of the nonlocal initial boundary value problems for some hyperbolic equations, *Hirosh. Math. J.*, vol. 31, № 3, 2001, 345-366;
20. G. Avalishvili, D. Gordeziani, On one class of spatial nonlocal problems for some hyperbolic equations, *Georgian Math. J.*, vol. 7, № 3, 2000, 417-425.