



**ARCHIL UGULAVA, PROFESOR
PHYSICS OF NONLINEAR PHENOMENA**

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Education

- University Diploma in Physics (Theoretical Physics), IvaneJavakhishvili Tbilisi State University
- Ph.D in Theoretical and Mathematical Physics, IvaneJavakhishvili Tbilisi State University
- Doctor of Phys. Math Sci., Physics of Non-linear Phenomena, IvaneJavakhishvili Tbilisi State University

Teaching Courses:

- Mechanics
- Molecular Physics
- Electromagnetism
- Optics and AtomicPhysics
- Statistica lPhysics
- Physics of nonlinear phenomenon

Research Interests

- Dynamical Stochasticity and quantum Chaos
- Magnetic nanoparticles and superparamagnetism

Running projects

- Theoretical Study of Thermodynamic Quantities of magnetic nano-fluids
- Theoretical Investigation of Magnetization and Magnetic Susceptibility of Magnetic Nanoparticle Powders

Selected Publications

1. A.Ugulava, S.Chkhaidze, Z.Toklikishvili, Sh.Kekutia. Determination of the Magnetic characteristic of Nanoparticles by Low-temperature calorimetry methods. *Physica B*, 513, (2017), 77-81.
2. A.Ugulava, S.Chkhaidze, Z.Rostomashvili. Magnitization of superparamagnets in The State of Mechanical anisotropy. *PhMM*, vol.118, No.4, pp. 334-340, 2017.
3. A.Ugulava, S.Chkhaidze, Sh.Kekutia, M.Verulashvili. Determination of the Magnetic Anisotropy Constant of Nanoparticles Using Measurements of the Low-temperature Heat Capacity. *Physica B*, 454,(2014), pp 249-252.
4. A.Ugulava, Z.Toklikishvili, S.Chkhaidze, R.Abramishvili, L.Chotorlishvili. Quantum Theory of rotational izomerizm and Hill Equation. *J. Math. Phys.* vol.53, (2012).
5. A.Ugulava, G.Mchedlishvili, S.Chkhaidze & L.Chotorlishvili. Quantum Corrections to the Classical Model of the Atom-field sistem. *Phys. Rev. E*, 84, 046606 (2011).
6. L.Chotorlishvili, A.Ugulava, G.Mchedlishvili, A.Komnik, S.Wimberger, & J.Beracdar. Nonlinear Dinamics of Two Coupled Nanoelectromechanical resonators. *J.Phys.B*, 44, 215402 (9pp), (2011).
7. A. Ugulava, L.Chotorlishvili. Quantum Chaos and its Kinetic Stage of Evolushion. *Physica D*. 239,103, (2010).
8. A. Ugulava, L. Chotorlishvili, V. Skrinnikov, G. Mchedlishvili. Coherence of Chain oscillators in Nonlinear Girotopik Medium. *Commun. Teor. Phys. (Beijing, China)* 50, pp.1381-1386, (2008).
9. A. Ugulava, L.Chotorlishvili, G. Mchedlishvili, K. Nikoladze. Paul Trap and the Problem of Quantum Stability. *Modern Physics Letters B*, vol. 22, 1959-1964, 2008.
10. A.I. Ugulava, Z.Z. Toklikishvili, L.L. Chotorlishvili. Teory of Stochastic Saturation of Ferromagnetic Resonance. *Low Temperature Physics*. 34, (6), p. 418, 2008.
11. R. Khomeriki, A. Ugulava, L. Chotorlishvili. Self-chaotisation in Coupled Optical Waveguides. *J. Opt. Soc. Am. B*. vol. 25, No. 8, 1265, 2008.
12. A. Ugulava, L. Chotorlishvili, K. Nikoladze, G. Mchedlishvili. Coherence of Chain oscillators in Nonlinear Girotopik Medium. Phenomenon in Nonlinear Girotopik Medium. *International Journal of Modern Physics B*, vol. 22, No 4, pp. 381-405, 2008.
13. A.Ugulava, L. Chotorlishvili, T. Kereselidze, V. Skrinnikov. Chaos, fractals and Quantum Poinkare Recurrences in Diamagnetic Kepler Problem. *Mod. Phys. lett., B*, vol. 21, No23, p.79-96. 2007.
14. A. Ugulava, L. Chotorlishvili, V. Skrinnikov, G. Mchedlishvili. Coherency of the Chain of chaotic oscillators in nonlinear girotopik medium. *Mod. Phys. lett., B*, vol. 21, No32, 2007.
15. Ugulava, L. Chotorlishvili, T. Gvardjaladze, S. Chkhaidze. Investigation of the Quantum Chaos of Internal Rotational Motion in Polyatomic Molecules. *Mod. Phys. Lett. B*. vol. 21, p. 1-16, 2007.
16. А.И. Угулава, Л.Л. Чоторлишвили, З.З. Токликишвили, А.Б. Сагарадзе. Хаотическая динамика ядерной намагниченности, обусловленная резонансными эффектами. *ФНТ*, т.32, №10, с.7, 2006
17. A. Ugulava, L. Chotorlishvili, K. Nikoladze. Irreversible Evolution of Quantum chaos. *Phys. Rev. E*, vol.71, No1, 2005.
18. A. Ugulava, L. Chotorlishvili, K. Nikoladze. Quantum-mechanical Research Nonlinear Resonance and the Problem of Quantum Chaos. *Phys.Rev.E* 70, (2004).
19. A. Ugulava, L.Chotorlishvili & K. Nikoladze. Overlapping of Nonlinear resonances and Problem of quantum Chaos. *Phys.Rev. E*, 026216, (2003).