

## CURRICULUM VITAE

Surname (family name): **Vacaru** first name (Christian name): **Sergiu**

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**Affiliation:** CS-I, senior researcher of grade 1, limited term contract at  
Science Department, University "Al. I. Cuza" Iasi, Romania

**Publications:** by 130 scientific works (totally, more than 260 titles for 4 books, preprints, published summaries and scientific communications etc) related to geometry and mathematical methods in physics, gravity and classical and quantum fields, kinetics and condensed matter.

### **Education (degrees, dates, universities):**

1. Degree on experimental nuclear physics, 1976-1982, Tomsk Polytechnic University, Russia, Department of Engineering and Physics
2. Postgraduate, general relativity and gravitation, 1984-1987, "M.I. Lomonosov" State University, Moscow, Russia, Department of Theoretical Physics
3. Degree on high-temperature superconductivity physics, 1988-1989, "T.G. Shevchenko", State University, Kiev, Ukraine, Department Radio-Physics
4. PhD, theoretical physics, 1994, "Application of Nearly Autoparallel Maps and Twistor Gauge Methods in Gravity & Condensed States", "Al. I. Cuza" University, Iasi, Romania

### **Employment/fellowships/long term visits (employers/hosts, positions and dates):**

1. State University of Moldova, Chisinau, Astrophysical Observatory; engineer, 1982-1983
2. Joint Institute of Nuclear Researches, Dubna, Russia; young researcher, 1982-1984
3. Academy of Sciences, Moldova; scientific worker: 1987-1996; senior: 1996-2001
4. Tiraspol State University at Chisinau, R. Moldova; lecturer (pluralistically): 1992-1993
5. International Independent University of Moldova & Academy of Economics Studies, Chisinau, R. Moldova, associate professor (pluralistically/ English), 1996-1997
6. Institute for Space Sciences, Romania; principal senior researcher of grade 1, 2001
7. California State University at Fresno, USA, visiting researcher, 2001
8. Athens University, Greece , visiting professor, 2001
9. Universitate Tecnica de Lisboa, Instituto Superior Tecnico, NATO/Portugal Fellowships and collaborations; Physics and Math Departments, 2001-2005
10. Institute of Mathematics and Fundamental Physics, IMAFF, Supreme Council for Scientific Research, CSIC, Madrid, Spain, sabbatical professor, 2004-2005
11. Department of Mathematics, Brock University, Ontario, Canada, visiting international professor (research), 2005-2006
12. Fields Institute for Research in Mathematical Sciences, Toronto, Canada, visiting researcher, 2006-2008

**Specializations:**

(i) main fields: mathematical physics; geometry and physics; gravity and strings

(ii) other fields: nuclear physics, condensed matter

(iii) university and/or research professor/ pedagogical activity (pluralistically): astrophysics and space sciences (1992-1993; Romanian and Russian); higher mathematics and mathematical modeling in economics, theory of probability and mathematical statistics, mathematical programming (English, 1996-1997); supervision graduate/post-graduate thesis (Romanian and Russian, 1992-2001); partial differential equations and discrete optimization (English, 2005)

**Research activity/ interests** (with publications): exact solutions in gravity; wormholes, spinors, solitons and pp-waves ...; strings and extra dimension gravity, spinors and twistors; gauge gravity; quantum gravity; mathematical cosmology and astrophysics; generalized Finsler (super)spaces and metric-affine gravity; stochastics in locally anisotropic (super)spaces; locally anisotropic thermodynamics and kinetics; quantum field & geometric methods in condensed matter physics; Fedosov and geometric quantization; nonholonomic geometry; Clifford and spinor structures; geometric methods in physics and mechanics, Riemann-Finsler and Lagrange-Hamilton geometry; noncommutative geometry and modified gravity, algebroids and physics, nonholonomic Ricci flows and applications in physics; fractional calculus and applications.

**Honors, Awards, Fellowships, Memberships ...:**

2011-2004 Project IDEI of Romanian Government, 350 000 Euro

2010 A. Einstein Institute, Max Planck Institute, Potsdam-Golm, Germany

2006-2008 Visiting research, Fields Institute, Toronto, Canada

2005-2006 Visiting International Professor, Brock University, Canada

2001, 2005 California State University at Fresno, Legislative Award

2001 Visiting professor at the Athens University, Greece

2000 DAAD (German Academic Exchange Service) Fellowship

1989-... former USSR and Russian and Romanian Gravitational Societies

1982 university grade with excellence (red diploma)

1975 high school certificate with excellence (gold medal)

**Short visits/seminars/conferences, or travel grants:** UK (2011) UCL and KCL; Norway (2011) Univ. Stavanger; Italy (2011) Univ. Bologna; Spain (2011) Univ. Granada, UAM, ICM, UAB; Germany (2010-11) ZARM-Univ. Bremen and Jacobs Univ. Bremen, AEI MPI and Un. Leipzig; France (2010); Austria-Belgium-Luxembourg (2010), Univ. Vienna-ESI, Mons, Luxembourg; Turkey (2010): Universities: METU, Bilkent, Cankaya (Ankara) and Bogazici, Yeditepe, Bahceshir (Istanbul); Perimeter Institute, Waterloo (2008), and Fields Institute, Toronto, Canada (2007); Universities in Spain: Cantabria, Santander (2004), Huelva (2004); CSIC, Madrid (2004), Murcia (2004), Zaragoza (2003); Tennessee Technical University, USA (2002), University of Thessaloniki, Greece (2001), Konstanz University, Germany (1999,2000), "I. Newton" Mathematical Institute, Cambridge, UK (1999); ICTP Trieste, Italy (1999); Universities in Poland: Lodz and Warsaw (1998), Torun (1999); Geometric Institute Debrecen, Hungary (1994); a number of Universities in Russia, Ukraine Georgia, Armenia and Romania (1992-2011; 2009).

**Languages:** *Fluent:* English, Romanian and Russian; *beginning:* French, Spanish and Portuguese; with dictionary: the bulk of Slavic and Latin languages.

/Sergiu Vacaru/