

**Sergiu Vacaru**  
[First name Surname]

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**Titles:** Ph.D. and CS-I, senior researcher of grade 1, Romanian “research professor”,  
Doctor in physics and mathematics

**Present affiliations**

A) Adjunct assistant professor, Department of Physics, California State University at Fresno, 2345 E. San Ramon Ave. M/S MH37, Fresno, CA 93740, the USA

B) Director Project IDEI, University “Al. I. Cuza” Iasi, Romania  
[till the end of research program]

**Profile:** Dr. Sergiu Vacaru has almost 35 years of research and 5 years teaching experiences on mathematical particle physics, gravity and cosmology, and geometric methods in physics, with more than 100 peer-reviewed articles and 160 scientific works (350 titles including 8 monographs and university textbooks and lecture notes, preprints, scientific talks etc.). He received the equivalents of MS and Ph.D. degrees and Research Professor title, CS1, in the former USSR and Romania: at Tomsk Polytechnic University; M. Lomonosov Moscow State University; T. Shevchenko Kiev University; University Al. I. Cuza at Iasi etc. Sergiu Vacaru hold more than 20 long-term NATO and UNESCO fellowships, visiting professor and senior research positions at CERN-Geneva; Fields and Perimeter Institutes in Canada; M. Planck – W. Heisenberg Institute in Munich and A. Einstein Institute, Potsdam-Germany; I. Newton Institute, Cambridge University, UK; California State University, Fresno, USA; CSIC Madrid and IST Lisbon, etc.

***His publications can be found in***

[http://inspirehep.net/search?ln=en&ln=en&p=f+a+Vacaru&of=hb&action\\_search=Search&sf=earliestdate&so=d&rm=&rg=250&sc=0](http://inspirehep.net/search?ln=en&ln=en&p=f+a+Vacaru&of=hb&action_search=Search&sf=earliestdate&so=d&rm=&rg=250&sc=0)

<https://arxiv.org/find/all/1/all:+vacaru/0/1/0/all/0/1>

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

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

Russia, Department of Engineering and Physics

**Employment and long-term fellowships (positions and dates)**

- 1) Quantum Gravity Research, Los Angeles, California, USA; research scientist, 2016-2017
- 2) University Alexandru Ioan Cuza, UAIC, Iasi, Romania; research professor – CS1 and director project IDEI, 2009-2017
- 3) Fields Institute for Research in Mathematical Sciences, Toronto, Canada; visiting researcher, 2006-2008
- 4) Department of Mathematics, Brock University, Ontario, Canada; visiting international professor (research), 2005-2006
- 5) Institute of Mathematics and Fundamental Physics, IMAFF, Supreme Council for Scientific Research, CSIC, Madrid, Spain; sabbatical professor, 2004-2005
- 6) Universidade Tecnica de Lisboa, Instituto Superior Tecnico, NATO/Portugal Fellowships and collaborations; Physics and Math Departments, 2001-2005
- 7) California State University at Fresno, USA; visiting researcher, 2001
- 8) Institute for Space Sciences, Romania; principal senior researcher of grade 1, 2001
- 9) Athens University, Greece; visiting professor, 2001
- 10) International Independent University of Moldova; associate professor (pluralistic/ English), 1996-1997
- 11) Academy of Economics Studies, Chisinau, R. Moldova; associate professor (pluralistic/ English), 1996-1997
- 12) Tiraspol State University at Chisinau, R. Moldova; lecturer (pluralistic) 1992-1993
- 13) Academy of Sciences, Moldova; scientific worker: 1987-1996; senior: 1996-2001
- 14) Joint Institute of Nuclear Researches, Dubna, Russia; young researcher, 1982-84
- 15) State University of Moldova, Chisinau, Astrophysical Observatory; engineer, 1982

**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):**

General relativity and modified gravity; exact solutions in gravity: black holes, wormholes, solitons and pp-waves, cosmological solutions; (super) gravity and strings; gauge gravity; quantum gravity; mathematical cosmology and astrophysics; generalized Finsler-Lagrange-Hamilton (super) geometry and physics; stochastics and locally anisotropic thermodynamics and kinetics; quantum field & geometric methods in condensed matter physics; fractional calculus and geometry, with applications; geometry of quasicrystals and quasi-periodic structures in physics and cosmology; deformation & geometric quantization; nonholonomic and almost Kaehler geometry; Clifford & Dirac structures; spinors and twistors; geometric methods in physics & mechanics;

noncommutative geometry and gravity, algebroids and physics, nonholonomic Ricci flows and applications.

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

2016 -17 visiting scientist, Quantum Gravity Research, Los Angeles, CA, USA  
2015 DAAD (German Academic Exchange Service) fellowship  
2013-14 visiting associate researcher at TH-CERN  
2011-15 project IDEI of the Romanian Government  
2010 visitor at 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:**

Bloomington University (IND, USA, 2017) Columbia State University (NY, USA, 2016); Un. Leibniz, ITP, Hannover and M. Plank Inst. Physics, Munich (Germany, 2015) Univ. Sapienza, Roma (Italy, 2015); Hebrew Univ. Jerusalem, and Ben-Gurion Univ. Beer-Sheva (Israel, 2015); Prague and Brno (Czech R., 2014); CERN-Switzerland, Poland, Greece (2013); Sweden, Poland, Greece, Estonia, Turkey (2012); UK: UCL and KCL, Norway: Univ. Stavanger; Italy: Univ. Bologna, Spain (2011) Univ. Granada, UAM, ICM, UAB (2010); Germany: ZARM-Univ. Bremen and Jacobs Univ. Bremen, AEI MPI and Un. Leipzig (2010-11); France, Austria-Belgium - Luxembourg: Univ. Vienna-ESI, Mons, Luxembourg; Turkey: Universities: METU, Bilkent, Cankaya (Ankara) and Bogazici, Yeditepe, Bahceshir (Istanbul) (2010); 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 (native) and Russian; beginning: French, Spanish and Portuguese; with dictionary, the bulk of Slavic and Latin languages.

**Computer skills:** Microsoft Word, Latex, Scientific Word, Mathematica, Maple

**References:** Available on request