Gabriel Baditoiu   Curriculum Vitae

CONTACT
INFORMATION

Institute of Mathematics "Simion Stoilow"
of the Romanian Academy
P.O. Box 1-764
014700 Bucharest
Romania

Fax (not private): +40-21-3196505
http://www.imar.ro/~gbadit
E-mail: gabriel.baditoiu@imar.ro

EDUCATION

- 2001-2007: Ph.D. in Mathematics, awarded on May 20, 2007 from Boston University, Department of Mathematics and Statistics, Thesis title: Integrable systems and Feynman diagrams.
- 1998-2003: Diplomă de Doctor in Matematică, MEC Order 3876/19.05.2004
- 1997-1998: M.Sc. in Geometry, University of Bucharest, Department of Mathematics (Diplomă de Master in Geometrie)
- 1992-1997: B.Sc. in Mathematics, University of Bucharest, Department of Mathematics (Diplomă de Licenţa in Matematică)

EMPLOYMENT

Institute of Mathematics "Simion Stoilow" of the Romanian Academy (IMAR), Bucharest, Romania

- 2017-present Researcher III
- 2001-2017 Researcher
- 1998-2001 Research Assistant
- 1997-1998 Junior Research Assistant

VISITING
POSITIONS –
SELECTED LIST

Abdus Salam International Centre for Theoretical Physics, Trieste, Italy
- February 1, 2010 – March 31, 2010: Research Fellow

Max Planck Institute for Mathematics, Bonn, Germany
- September 1, 2008 – August 31, 2009: Visiting Guest (Postdoctoral Fellow)

University of Arizona, Department of Mathematics, Tucson, USA
- August 13, 2007 - May 18, 2008: Visiting Assistant Professor

Boston University, Department of Mathematics, Boston, USA
- September 1, 2002 – May 20, 2007 (nine month employment for each academic year): Teaching Assistant

Boston University, Department of Mathematics, Boston, USA
- September 2001 – May 2002: Graduate Student

FELLOWSHIPS,
AWARDS, GRANTS

- January 2012 – December 2016: team member in a research grant of the Romanian National Authority for Scientific Research, CNCS - UEFISCDI, project number PN-II-ID-PCE-2011-3-0362 (Project leader: Liana David).

- May 2013 – September 2016: team member in a research grant of the Romanian National Authority for Scientific Research, CNCS - UEFISCDI, project number PN-II-RU-TE-2012-3-0492 (Project leader: Dorin Cheptea)
- November 15, 2017 – December 2019: team member in a research grant of the Romanian National Authority for Scientific Research, CNCS - UEFISCDI, project number PN-III-ID-P4-PCE-2016-0019 (Project leader: Liana David), the present part time employment is 6 hours/month.
- Research paper award within CNCSIS program PN-II-RU-PRECISI-2010-4, Romanian Ministry of Education, Research, and Youth (gross income of 4000 lei)
- Presidential University Graduate Fellowship, Boston University, 2001–2005 (14000$ for the academic year 2001-2002 and 500$ for each academic year in 2002-2005)
- European Union TEMPUS fellowship, Technische Universität München, Germany, March – May 1998
- Merit Fellowship, University of Bucharest, Romania, 1992–1998
- Prize of the Romanian Society of Mathematical Sciences in 1988 in the national competition in mathematics

RESEARCH INTERESTS   Riemannian Geometry, Integrable Systems

PUBLICATIONS

1. *Classification of homogeneous Einstein metrics on pseudo-hyperbolic spaces*, preprint 2013, major revision in 2016 posted on arxiv in 2018: arxiv 1309.1390.

2. *Integrable Systems and Connes-Kreimer renormalization*, preprint 2016.

3. *Classification of Pseudo-Riemannian submersions with totally geodesic fibres from pseudo-hyperbolic spaces*, **Proceedings of the London Mathematical Society 105** (2012), no 6, 1315–1338, DOI:10.1112/plms/pds027, MR3004106

4. *Spectral geometry of Riemannian Legendre foliations* (joint with Stere Ianuş and Anna Maria Pastore), **Bulletin Mathématique de la Société de Sciences Mathématiques de Roumanie 56** (2013), no. 2, 135–150, http://ssmr.ro/bulletin/volumes/56-2/node2.html

5. *Lax pair equations and Connes-Kreimer Renormalization* (joint with Steven Rosenberg), **Communications in Mathematical Physics 296** (2010), no. 3, 655–680, DOI: 10.1007/s00220-010-1034-7, MR2628819 (2011h:81146).

6. *Integrable systems and Feynman diagrams*, Ph.D thesis 2007, Boston University, 122 pag. ISBN: 978-1109-97582-6, **ProQuest LLC**, PDF available from ProQuest http://search.proquest.com/docview/304897425/, MR2710093.

7. *A Cohomology $(p+1)$ Form Canonically Associated with Certain Codimension-q Foliations on a Riemannian Manifold* (joint with Richard H. Escobales Jr. and Stere Ianuş), **Tokyo Journal of Mathematics 29** (2006), no. 1, 247–270. DOI: 10.3836/tjm/1166661878, Errata in vol **30** (2007), no. 1, p. 283, DOI:

10.3836/tjm/1184963661, MR2258283 (2007k:53020).

8. *Semi-Riemannian submersions with totally geodesic fibres*, **Tohoku Mathematical Journal 56** (2004), no. 2, 179–204, DOI: 10.2748/tmj/1113246550, MR2053318 (2005a:53115).

9. *Semi-Riemannian submersions with totally umbilic fibres and warped products*, **Mathematical Reports (Bucureşti) 6(56)** (2004), no. 1, 1–7, MR2068392 (2005d:53110).

10. *Semi-Riemannian submersions from real and complex pseudo-hyperbolic spaces* (joint with Stere Ianuş), **Differential Geometry and its Applications 16** (2002), 79–94. DOI: 10.1016/S0926-2245(01)00070-5, MR1877586 (2003h:53095).

11. *Semi-Riemannian submersions with totally umbilic fibres* (joint with Stere Ianuş,), **Rendiconti del Circolo Matematico di Palermo 51** (2002), 249–276. DOI: 10.1007/BF02871654, MR1916929 (2003f:53124).

12. *Submersii Riemann si distribuţii slab armonice*, **Mathematical Reports (Bucureşti) 1(51)**(1999), no. 1, 3–8. MR1826607 (2002d:53039)

13. *Some remarkable connections and semi-Riemannian submersions* (joint with Klaus Buchner and Stere Ianuş), **Bulletin Mathématique de la Société de Sciences Mathématiques de Roumanie 41(89)** (1998), no. 3, 153–169. MR1880200 (2002k: 53035).

Conference Talks

- *Lax pair equations and Connes-Kreimer renormalization*, The 24th International Conference on Integrable Systems and quantum symmetries, Prague, 17.06.2016.
- *Classification of pseudo-Riemannian submersions with totally geodesic fibres from pseudo-hyperbolic spaces*, Real and complex differential geometry, Bucharest, 08.09.2014,
- *Lax pair equations and Connes-Kreimer renormalization*, Analysis, Geometry and Quantum Field Theory, International scientific workshop in honour of Steven Rosenberg's 60th birthday, September 26-30, 2011.
- *Lax pair equations and Feynman diagrams*, at the Conference on Number Theory and Physics, ESI Vienna, March 19, 2009
- *Semi-Riemannian submersions from real and complex pseudo-hyperbolic spaces*, Conference on Foliations: Geometry and Dynamics, Warsaw, 2000

Seminar Talks

- *Lax pair equations and Connes-Kreimer renormalization*, Università degli Studi di Roma "La Sapienza" (Italy), July 27, 2010
- *Pseudo-Riemannian submersions and Osserman manifolds*, Università degli Studi di Bari (Italy), March 25, 2010
- *Classifications of Pseudo-Riemannian submersions with totally geodesic fibres from pseudo-hyperbolic spaces*, Università degli Studi di Bari (Italy), March 26, 2010

- *Pseudo-Riemannian submersions with totally geodesic fibres*, Università degli Studi di Roma "La Sapienza" (Italy), March 19, 2010
- *Lax pair equations and Connes-Kreimer renormalization*, the ICTP seminar, February 19, 2010
- *Lax pair equations and Feynman diagrams*, in the Oberseminar of the Max Planck Institute for Mathematics, October 16, 2008
- *Pseudo-Riemannian submersions with totally geodesic fibres*, The University of Arizona Geometry Seminar, September 11, 2007
- *Lax pair equations and Feynman diagrams*, The University of Arizona Geometry Seminar, September 4, 2007
- *Feynman diagrams and Lax pair equations*, Boston University Mathematical Physics Seminar, December 4, 2006
- Regular talks in Graduate Students Seminar at Boston University in period 2003-2007
- Regular talks in Differential Geometry Seminar at IMAR

CONFERENCES AND WORKSHOPS (SELECTED LIST)

Received funding from the organizers to attend the following conferences and workshops:

- The interrelation between mathematical physics, number theory, and non-commutative geometry, ESI Vienna, 2–13.03.2015

- Clay Mathematics Institute Summer School 2014 Periods and Motives: Feynman amplitudes in the 21st century ICMAT, Madrid 30.06–25.07.2014

- K-Theory and Quantum Fields, ESI Vienna, 4–18.06.2012

- Analysis, geometry, and quantum field theory : International Conference in Honor of Steve Rosenbergs 60th birthday, 26-30.09.2011, University of Potsdam, Potsdam

- The Programme on Number Theory and Physics, ESI Vienna, March 10 – 31, 2009

- Conference on Motives, Quantum Field Theory, and Pseudodifferential Operators Boston University June 2 – 13, 2008

- Summer School on Invariants in Low-Dimensional Topology, Alfred Renyi Institute of Mathematics, Budapest (Hungary), June 16 – 21, 2003

- School on Topology of High-Dimensional Manifolds, ICTP Trieste (Italy), May 20 – June 9, 2001

- Conference on Foliations: Geometry and Dynamics, Warsaw (Poland), May 29 – June 9, 2000

- School on Vanishing Theorems and Effective Results in Algebraic Geometry, International Center for Theoretical Physics (ICTP) - Trieste (Italy), April 25 – May 12, 2000

- Global Theory of Minimal Surfaces in Flat Spaces, Martina Franca (Italy), July 7 – 15, 1999

- School on Differential Geometry, ICTP Trieste, April 12 – 30, 1999

- The 7th International Conference on Differential Geometry and applications, satellite conference of ICM98, August 10 – 14, 1998, Brno, Czech Republic

TEACHING
EXPERIENCE

- Fall 2002 – Spring 2007: Teaching assistant for the Department of Mathematics of Boston University for the following courses: Elementary Statistics, Applied Mathematics for Social and Management Sciences, Calculus 2, Multivariate Calculus, Differential Equations.

- Stand-alone instructor for the following Boston University courses: Multivariate Calculus in the Summers of 2004 and 2005, Calculus 2 in Summer 2006, Statistics in Summer 2007.

- Fall 2007 - Spring 2008: Instructor for the Department of Mathematics of the University of Arizona for Calculus 1 and 2.

LANGUAGES   Romanian (native), English