

Dorin Cheptea

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Education:

- 2000 - 2005 PHD IN MATHEMATICS, State University of New York at Buffalo, USA
"A TQFT for the Le-Murakami-Ohtsuki invariant of three-dimensional manifolds"
Advisor: Thang T. Q. Le, *Defence:* 29 April 2005, *Formal conferral:* 1 June 2005
- 1997 - 1999 MASTER IN MATHEMATICS, University of Bucharest, Romania
"Finite-type invariants of knots and links", *Advisor:* Barbu Berceanu
- 1993 - 1997 LICENSE IN MATHEMATICS, University of Bucharest, Romania
"Geometry of Yang-Mills fields", *Advisor:* Kostake Telean
- 1990 - 1993 (while in high school) Long-Distance Mathematical School affiliated to the Moscow State University

Work experience:

- 08/2008-present CS III (researcher 3rd degree), Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania
- 09/2007-07/2008 CS (researcher), IMAR, Bucharest, Romania
- 09/2006-08/2007 Post-Doc, Center for the Topology and Quantization of Moduli Spaces, University of Århus, Denmark (worked under J. E. Andersen and N. Reshetikhin)
- 10/2005-08/2006 ATER, UFR de Mathématique et d'Informatique, Université Louis Pasteur, Strasbourg, France (worked under C. Kassel)
- 08/1997-08/2007 junior researcher, IMAR, Bucharest, Romania (under Ș. Papadima) (on leave for the periods of PhD and Post-Docs)

Research interests:

Low dimensional topology (knots, 3-dimensional manifolds, cobordisms, representations and structure of the Mapping Class Group, and its subgroups), Quantum topology (finite type and quantum invariants, TQFTs, topological interpretation of invariants), Moduli spaces of representations of the fundamental group (Goldman Lie algebra, Poisson algebras, Teichmüller theory, Higgs bundles, combinatorial models), and their Quantization.

Students:

- 2014-2016 Cristina Anghel, Master thesis "*The Volume Conjecture for Knots and Links*" at the University of Bucharest, co-advised with Victor Vuletescu

Grants:

- 05/2009-11/2011 *Geometric and Quantum Invariants of 3-Dimensional Manifolds, and Applications*, CNCSIS grant awarded by the Romanian Ministry of Education, Research, and Youth, ref. no. PN-II-ID-PCE-2008-2-1188; team member; principal investigator: Sergiu Moroianu
- 05/2013-09/2016 *Investigation of quantum and finite-type invariants, applications in geometry and topology*, UEFISCDI grant awarded by the Romanian Ministry of Education, Research, and Youth, ref. no. PN-II-RU-TE-2012-3-0492; principal investigator myself

Talks:

- 07/1997 "Convex Geometry", German-Romanian summer school, Bucharest, Romania
Weak ε -nets
- 08/1998 7th Intn'l Conf. on Differential Geometry and Applications, satellite conf. of ICM98, 10 - 14 August, Brno, Czech Republic,
Some remarks on Floer homology invariants
- 11/1998 G.Tzitzeica honorific session, University of Bucharest, Romania
Some remarks on Floer homology invariants
- 12/2003 "Borders in 3-dimensional manifolds", conference at the Ohio State University, USA
A TQFT for the LMO invariant of three-dimensional manifolds
- 04/2004 30th Annual New York State Regional Graduate Mathematics Conference, Syracuse University, USA
Finite-type invariants of 3-manifolds and Topological Quantum Field Theory
- 06/2004 Lehigh University Geometry/Topology Conference, Bethlehem, Pennsylvania, USA
A TQFT for the LMO invariant of three-dimensional manifolds
- 11/2004 AMS Sectional Meeting # 1002, Pittsburgh, Pennsylvania, USA
A TQFT for the LMO and the universal quantum invariant of 3-manifolds
- 01/2005 Annual Joint AMS/MAA/SIAM Conference, Atlanta, Georgia, USA
Torelli group, finite-type invariants, and TQFT for the Casson invariant
- 09/2005 7th Intn'l Workshop on Differential Geometry and Its Applications, Deva, Romania
Representations of the Torelli group from invariants of homology 3-spheres
- 05/2006 "Knots, Groups and 3-Manifolds", conference in Marseille, France
Finite-type invariants, framed graphs, tangles, and a class of cobordisms
- 08/2006 CTQM workshop "Quantum Moduli Spaces and TQFT", Aarhus, Denmark
Finite-type invariants of 3-dimensional manifolds, TQFT, and beyond
- 12/2006 CTQM Nielsen retreat "Algebraic, Geometric, Topological, and Quantum aspects of moduli spaces", Sandbjerg Gods, Denmark
Lagrangian cobordisms and LMO invariant
- 08/2007 AMS/PTM First Joint International Meeting, Warsaw, Poland
A functorial LMO invariant for Lagrangian cobordisms
- 03-04/2008 CTQM Workshop "Finite Type Invariants, Fat Graphs and Torelli-Johnson-Morita Theory", Aarhus University, Denmark
A functorial extension of the LMO invariant and some applications
- 05/2008 University of Luxembourg, Luxembourg (invited)
Lagrangian cobordisms and finite type invariants
- 04/2010 Uppsala University, Sweden (invited)
The universal finite-type invariant of three-dimensional manifolds and of cobordisms, and applications
- 06-07/2011 7th Congress of Romanian Mathematicians, Braşov, Romania
Weight systems and finite-type invariants of 3-dimensional manifolds
- 08/2011 MITRE-2011 Conference, Chişinău, Moldova
Applications of the Jacobi-digrammatic formulation of Johnson-Morita homomorphisms
- 12/2011 Centre for Quantum Geometry of Moduli Spaces, University of Aarhus, Denmark
Applications of the Jacobi-digrammatic formulation of Johnson-Morita homomorphisms
- 05/2016 Workshop for Young Researchers in Mathematics, 6th edition, Contanţa, Romania
Jacobi diagrams on surfaces and quantum invariants
- 05/2017 Workshop for Young Researchers in Mathematics, 7th edition, Bucureşti, Romania
Goldman Lie algebra and its role in the theory of knots and 3-dimensional manifolds

Regular seminar talks:

- 1997-2000 *Topology seminar*, IMAR, Bucharest, Romania
- 2000-2005 *Topology seminar*, State University of New York at Buffalo, USA
- 2005-2006 *Seminaire Quantique and GdT Ombres et 3-varietes*, IRMA, Université Louis Pasteur, Strasbourg, France
- 2006-2007 *Topology seminar*, CTQM, University of Aarhus, Denmark
- 2007-present *Topology seminar*, IMAR, Bucharest, Romania
- 2013-2016 co-organized *Two- and three-dimensional manifolds seminar*, IMAR
- 2017-present *Geometric methods in algebra and topology seminar*, IMAR

Teaching experience:

- 2014-2015 SNSB, Bucharest, Romania
Master Course "Introduction to Differential Topology", 48h
- 2012-2013 SNSB, Bucharest, Romania
(with Sergiu Moroianu) Master Course "Braid groups and Mapping Class Groups", 1/2 of 48h
- 2008-2009 SNSB, Bucharest, Romania
Master Course "Introduction to Quantum Topology", 48h
- 2007 University of Aarhus, Denmark
assistant for a graduate course in Algebraic Topology, 14h
- 2005-2006 Université Louis Pasteur, Strasbourg, France
ATER, Analyse L2 for Physics majors, 28h
ATER, Analyse L1 for Life Sciences majors, 72h
- 2000-2005 State University of New York at Buffalo, USA
 - 2004-2005 Basic Calculus 1 - Math 131 First year courses, 168h
 - 05-06/2005 Introduction to Differential Equations - Math 306 Third year course, 42h
 - 05-06/2004 Calculus 2 - Math 142 First year course, 42h
 - 05-06/2003 Calculus 1 - Math 131 First year course, 42h
 - 05-06/2002 Calculus 2 - Math 122 First year course, 42h
 - 2000-2004 TA and floater (112h each year) for Calculus (different levels), Mathematical Analysis (different levels), Linear Algebra, Abstract Algebra, Geometry (adv. level), Discrete Math - First to Forth year courses; Complex Analysis - undergrad/grad course
- 1997-1998 University of Bucharest, Romania
TA for Analytic Geometry and Linear Algebra - First year course, 42h

Awards, Fellowships, Qualifications:

- 1991 - 1993 (in high school) various Mathematics Olympiads
- 1996 - present various grants for participation in conferences and summer schools
- 03-05/1998 EU Tempus Scholarship at the Technische Universität München, Germany (under K. Buchner)
- 05/2002 Doctoral Dissertation Fellowship, University at Buffalo, USA
- 09/2005 UUP Individual Development Award, State University of New York at Buffalo, USA
- 02/2006 CNU Qualification for MCF positions in French universities

Membership:

2000-2005, 2008-present American Mathematical Society
2006-2007 Société Mathématique de France

Personal data:

Date and place of birth: 14 September 1976, Bălți, Moldova
Citizenships: Romania, Moldova
Languages: Romanian (native), English, French, Russian
Computer skills: standard Linux and Windows applications, \LaTeX , some Java programming