

Curriculum Vitae

Radmila Sazdanović

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RESEARCH INTERESTS

Low-dimensional topology, knot theory, categorification, combinatorics, computational mathematics.

EDUCATION

2010 PhD in Mathematics

Advisor J.H. Przytycki, George Washington University, Washington DC

Fall 2008 Visiting Scholar Columbia University, New York

2007 Masters of Art, Mathematics, George Washington University, Washington DC

2005 B.S. in Mathematics (equiv.) Belgrade University, Belgrade, Serbia

PROFESSIONAL EXPERIENCE

Spring 2010 Postdoctoral Fellowship Mathematical Sciences Research Institute in Berkeley, Special program on Homology Theories of Knots and Links

2005- Research Assistant Mathematical Institute of the Serbian Academy of Sciences and Arts, Belgrade, Serbia, Leave of absence

1999/2000 IAESTE Practical training Institute for Distributed Systems, Otto-von-Guericke University, Magdeburg, Germany

AWARDS

2006 James H. Taylor Graduate Mathematics Prize George Washington University

2006 Marvin Green Prize George Washington University

2005-2010 Presidential Merit Fellowship George Washington University

2000 Scholarships for a promising generation Scholarship of the Royal Norwegian Embassy in Belgrade

LIST OF PUBLICATIONS

Book

Jablan, S., Sazdanović, R., 'LinKnot: Knot Theory by Computer', *World Scientific edition 'Knots and Everything'* **21** (2007) pp.500 ISBN 978-981-277-223-7

Research Papers

- Khovanov, M., Sazdanović, R., Categorifications of Hermite and other orthogonal polynomials, in preparation.
- Przytycki, J., Sazdanović, R., Torsion in Khovanov homology of semi-adequate links, in preparation.
- Pabiniak, M., Przytycki, J., Sazdanović, R., On the first group of the chromatic cohomology of graphs, *Geometriae Dedicata*, Vol 140, No. 1 (2009)19-48, ISSN 0046-5755, math.GT/0607326.
- Jablan, S., Sazdanović, R., Braid Family Representatives, *Journal of Knot Theory and Its Ramifications* **17** (7) (2008) 817-833, math.GT/0504479.
- Jablan, S., Sazdanović, R., Unlinking number and unlinking gap, *Journal of Knot Theory and Its Ramifications* **16** (10) (2007) 1331-1355, math/0503270.
- Jablan, S., Sazdanović, R., Knots, Links, and Self-avoiding Curves, *Forma*, **22** (1) (2007), 5-13.
- Jablan, S., Radović, Lj., Sazdanović, R., Basic Polyhedra in Knot Theory, *Kragujevac Journal of Mathematics*, 28(2005), 155-164. (<http://elib.mi.sanu.ac.yu/files/journals/kjm/28/12.pdf>)
- Kappraff J., Jablan S., Adamson G.W., Sazdanović R., Golden Fields, Generalized Fibonacci Sequences, and Chaotic Matrices, *Forma* **19** (4), (2004) 367-387

Software

- Jablan, S., Sazdanović, R., LinKnot- *Mathematica* package (<http://www.mi.sanu.ac.yu/vismath/linknot/index.html>)
Featured webMathematica sites:
(<http://www.wolfram.com/products/webmathematica/examples/others.html>).
- Sazdanović, R., Sremcević, M., 'Tessellations of the Euclidean, Elliptic and Hyperbolic Plane', MathSource, Wolfram research 2002
(<http://library.wolfram.com/infocenter/MathSource/4540/>)
- Knezević, I., Sazdanović, R., Vukmirović, S., 'Basic Drawing in the Hyperbolic Plane', MathSource, Wolfram research 2002 (<http://library.wolfram.com/infocenter/MathSource/4260/>)
- Jablan, S., Sazdanović, R., 'LinKnot: Knot Theory by Computer' Online book with interactive webMathematica version of LinKnot software. (<http://math.ict.edu.rs/>)
- Bar-Natan, D., Morrisson, S., Sazdanović, R., Making the best out of *Knot Theory* and *LinKnot* combination (http://katlas.math.toronto.edu/wiki/Conway_Notation,
http://katlas.math.toronto.edu/wiki/Using_the_LinKnot_package)

Online Publications

- Jablan, S., Sazdanović, R., Unknotting numbers of 11 and 12 crossing knots, Knot Tables by C. Livingston
(http://www.indiana.edu/~knotinfo/descriptions/unknotting_number.html)
- Knezević, I., Sazdanović, R., Vukmirović, S., Visualization of the Lobachevskian Plane, *Visual Mathematics - Art and Science Electronic Journal*, **4**(1) (2002)
(<http://www.mi.sanu.ac.yu/vismath/sazdanovic>)

Mathematical Art

Jablan S., Sazdanović R.: Discovering symmetry of knots by using program LinKnot, *Symmetry: Art and Science, The Journal of ISIS-Symmetry*, **1-4** (2004) 102-106.

Jablan, S., Sazdanović, R.: Visualizing symmetry of knots by using program LinKnot, *Symmetry: Art and Science, The Journal of ISIS-Symmetry*, **1-4** (2004) 106-110.

Sazdanović R., Sremcević, M., 'Hyperbolic Tessellations by tess, *Symmetry: Art and Science* (The Quarterly of ISIS Symmetry), **1-4** (2004) 226-229

Sarhangi R., Jablan, S., Sazdanović, R., Modularity in Medieval Persian Mosaics: Textual, Empirical, Analytical and Theoretical Considerations, *Bridges: Mathematical Connections in Art, Music and Science*, Conference Proceedings, (2004) 281-293.

Barrallo, J., Sazdanović, R., Computer Sculpture: A Journey Through Mathematics, *Bridges: Mathematical Connections in Art, Music and Science*, Conference Proceedings, (2002) 54

Sazdanović, R., Sremcević, M., Tessellations of the Euclidean, Elliptic and Hyperbolic Plane, *Symmetry: Art and Science*, **2** (2002) 229-304

INVITED TALKS

Claremont Topology Seminar, Pomona College, Claremont, CA (November 2009)

Fall Western Section AMS Meeting, Special Session on Algebraic Structures in Knot Theory (November 2009)

'Categorification of Orthogonal Polynomials', Invited talk at the Advanced School and Conference on Knot Theory and its Applications to Physics and Biology, International Centre for Theoretical Physics, Trieste, Italy (May 2009)

'To Cut or to Knot', DIMACS Workshop on Algorithmic Mathematical Art: Special Cases and Their Applications, Rutgers (May 2009)

'Categorification of orthogonal polynomials', Virtual Topology Seminar: LSU, U Iowa, Rice, GWU, U Miami, UN Omaha, Boise State, Cornell (April 2009)

'Categorification and Slarc Algebra', 2009 Graduate Student Topology and Geometry Conference, Madison, WI (April 2009)

'Plane diagrammatics and categorification', Joint Mathematics Meetings, Special Session on Categorification and Link Homology, Washington, DC (January 2009)

'Torsion in Khovanov homology of semi-adequate links', Special session on Knot and 3-Manifold Invariants, Spring Southeastern AMS Meeting, Baton Rouge, LA (March 2008)

'Torsion in Khovanov homology of semi-adequate links', The Workshop on Knots and Quantum Computing, University of Texas at Dallas, TX (December 2007)

'Unlinking gap', Knotting Mathematics and Art: International Conference in Low Dimensional Topology and Mathematical Art, Tampa, FL (November 2007)

'Torsion in Chromatic Graph Cohomology', Special session on Invariants of Links and 3-manifolds at the First Joint International Meeting between the AMS and the Polish Mathematical Society in Warsaw, Poland (August 2007)

‘Torsion in Chromatic Graph Cohomology’, Link Homology and categorification conference at the Research Institute for Mathematical Science at Kyoto University, Japan (May 2007)

‘Analyzing torsion in Khovanov-type graph cohomology over algebra $Z[x]/(x^m)$ ’, Special session on “Knots, 3-Manifolds, and Their Invariants” at the National AMS Meeting in New Orleans (January 2007)

‘Discovering torsion in chromatic graph homology’, AMS Meeting: 1017: Durham, New Hampshire Event: Special session on Quantum Invariants of Knots and 3-Manifolds (April 2006)

Quantum Topology-Hopf Algebra Seminar talk at the University of Illinois at Chicago, ‘Knot theory program: LinKnot’ (February 2006)

Topology Seminar talks at Indiana University Bloomington, ‘Knot theory program: LinKnot’ and ‘On the properties of Chromatic Graph Cohomology’ (January 2006)

‘On the properties of the first graph cohomology over the algebra of truncated polynomials’, Knots in Washington XXI, Washington, DC (December 2005)

‘Knot Theory Program - LinKnot’, DAAD Meeting on Multimedia Technology for Mathematics and Computer Science Education, Belgrade, Serbia (November 2005)

‘Braid family representatives’, Contemporary Geometry and Related Topics, Belgrade, Serbia (July 2005)

‘Knot theory program LinKnot’, Knots in Washington XXI, Washington, DC (December 2003)

SEMINARS/ WORKSHOPS/ SUMMER SCHOOLS

Interactions Between Hyperbolic Geometry, Quantum Topology and Number Theory, Columbia University (June 2009)

ICTP Advanced School and Conference on Knot Theory and its Applications to Physics and Biology, Trieste, Italy (May 2009)

MSRI Workshop in Low Dimensional Topology (August 2008)

Workshop in Low dimensional topology, Oberwolfach, Germany (May 2008)

PCMI/IAS Graduate Summer School in Low dimensional Topology IAS/Park City, UT (June-July 2006)

PROFESSIONAL ACTIVITIES AND SKILLS

Developed expertise in *Mathematica*

C and Web design

Member of AMS, AWM

Reviewer for Mathematical Reviews and Zentralblatt MATH

Co-editor of the Electronic journal “Visual Mathematics”
(<http://www.mi.sanu.ac.yu/vismath/index.html>)

Conference Co-organizer

- Special Session on Homology theories for knots and skein modules, Spring Eastern Sectional Meeting Newark, NJ, May 22-23, 2010
- Knots in Washington XXIX, 30 years of quandles, 10 years of Khovanov homology, George Washington University, DC, December 4-6, 2009
- DIMACS Workshop on Algorithmic Mathematical Art, DIMACS-Rutgers, NJ, May 2009
- First DC Math Graduate Student Meeting, George Washington University, DC, April 2009

EXTRACURRICULAR

Committee member IADIS International Conference Visual Communication 2009: Creative Industries, Photography and Culture Algarve, Portugal, 2009

Joint Mathematics Meetings: Exhibition of Mathematical Art, Washington, DC 2009

Joint Mathematics Meetings: Exhibition of Mathematical Art, San Diego January 2008 (Catalog: ISBN978-09802191-0-4)

Rhythm and Structure: Beyond the Mathematics accompanying exhibition Knotting Mathematics and Art: International Conference in Low Dimensional Topology and Mathematical Art, Museum of Science and Industry, Tampa