

## Professor Dušan D. Repovš: *Curriculum Vitae*

### Education:

- B. Sc. Math. University of Ljubljana, Slovenia, 1977  
M. Sc. Math. Florida State University, United States, 1979  
Ph. D. Math. Florida State University, United States, 1983

### Academic Positions:

- 1983-1987 Assistant Professor, University of Ljubljana and  
Scientific Associate, Institute of Mathematics, Physics and Mechanics, Ljubljana
- 1988-1993 Associate Professor, University of Ljubljana and  
Senior Scientific Associate, Institute of Mathematics, Physics and Mechanics,  
Ljubljana
- 1993-present Professor, University of Ljubljana and  
Scientific Councillor, Institute of Mathematics, Physics and Mechanics, Ljubljana

### Academic Visiting Positions:

- 1986-1987 Visiting Professor, University of Texas, Austin
- 1988-1997 Visiting Researcher, Steklov Mathematical Institute, Moscow
- 1991 Visiting Professor, University of Trieste
- 1992 Visiting Professor, University of Nantes
- 1992-2012 Visiting Professor, International Centre for Theoretical Physics, Trieste
- 1998, 2001 Japanese Society for Promotion of Science Senior Scientist, Tokyo

### Professional Activities:

- 1983-2008 Head, Topology and Geometry Group, Institute of Mathematics, Physics and  
Mechanics, Ljubljana
- 1983-present Chairman, Geometric Topology Seminar, University of Ljubljana
- 1984-1990 Senior Consultant, Institute of Metallurgy, Ljubljana
- 1985-1986 Senior Consultant, Research and Development Institute, Iskra Telecom, Kranj
- 1989-1994 Vice-President, Committee for International Cooperation, University of Ljubljana
- 1990-1991 Chairman, Department of Mathematics, Institute of Mathematics, Physics and  
Mechanics, Ljubljana
- 1990-present Head, Chair for Topology and Geometry, Faculty of Education, University of  
Ljubljana
- 1991-1993 Vice-Dean for Research, Faculty of Education, University of Ljubljana
- 1991-1999 Member, UNESCO National Committee, Ljubljana
- 1991-present Member, National Mathematics Coordinator Personal Core, Ljubljana
- 2006-2009 Member, Scientific Council, European Academy of Sciences, Brussels
- 2006-present Member, National Committee for Mathematics, Ministry of Education, Science  
and Sport, Ljubljana

- 2009-2021 Head, Nonlinear Analysis, Topology and Geometry Group, Institute of Mathematics, Physics and Mechanics, Ljubljana
- 2022-present Head, Topology and its Applications Group, Institute of Mathematics, Physics and Mechanics, Ljubljana

### **Membership in Academies**

- 1996 Elected to the Slovenian Academy of Engineering
- 1998 Elected to the New York Academy of Sciences
- 2004 Elected to the European Academy of Sciences
- 2017 Elected to the European Academy of Sciences and Arts
- 2022 Elected to the Accademia Peloritana dei Pericolanti

### **Awards and Honors**

- 1991, 1995 Steklov Mathematical Institute Citation
- 1995 Ambassador of Science of the Republic of Slovenia
- 1997 Prize of the Republic of Slovenia for Science
- 2006 Slovenian Research Agency Best Research Programs
- 2009 Bogolyubov Memorial Medal
- 2014 Honorary Doctorate
- 2018 University of Ljubljana Golden Plaque
- 2018 Slovenian Research Agency Excellence in Science
- 2019 Elsevier-JMAA Conference on the occasion of the 65th birthday
- 2020 Stanford University World's Top 2% Scientist
- 2020 Opuscula Mathematica Special Issue on the occasion of the 65th birthday
- 2021 Stanford University World's Top 2% Scientist
- 2021 Most Cited Mathematician in the field of Geometry and Topology
- 2021 Clarivate Analytics Highly Cited Researcher
- 2022 Stanford University World's Top 2% Scientist
- 2023 Research.com Mathematics in Slovenia Leader Award
- 2023 Stanford University World's Top 2% Scientist
- 2024 Top Cited Scholar 2024
- 2024 Stanford University World's Top 2% Scientist

### **Academic Fellowships**

- 1973-1977 Boris Kidrič Undergraduate Fellowship
- 1977-1978 Boris Kidrič Graduate Fellowship
- 1978-1979 Research Council of Slovenia Graduate Fellowship
- 1978-1980 Fulbright Grant
- 1998, 2001 The Japan Society for the Promotion of Science Research Fellowship

### **Mathematical Societies:**

*American Mathematical Society, European Mathematical Society, London Mathematical Society, Mathematical Society of Japan, Moscow Mathematical Society, Saint Petersburg Mathematical Society, Société Mathématique de France, Société Mathématique de Suisse, Unione Matematica Italiana, Österreichische Mathematische Gesellschaft.*

**Editorial Work:**

*Journal of Mathematical Analysis and Applications, Complex Variables and Elliptic Equations, Advances in Nonlinear Analysis, Boundary Value Problems, Electronic Journal of Differential Equations, Mediterranean Journal of Mathematics, Fixed Point Theory and Algorithms for Sciences and Engineering, and others.*

**Research Grants:**

1980-2027 Slovenian Research Agency national research programs (C1-0101, C1-0501, P1-0214, P0-0509, P1-0292)  
1995-2020 Slovenian Research Agency national research projects (J1-0885, J1-2057, J1-4144, J1-5435, J1-6128, J1-7025, J1-7039, J1-8131, J1-9643)  
2018-2021 Slovenian Research Agency – Austrian Science Fund (Lead Agency) collaborative research project (N1-0083)  
2012-2013 Montenegro-Slovenian bilateral project (BI-ME/012-13-001)  
2005-2006 French-Slovenian bilateral project (BI-FR/05-06/015)  
1998-2005 Italian-Slovenian bilateral projects (97001, BI-IT/02-05-009)  
1998-1999 Israeli-Slovenian bilateral project  
2003-2007 Japanese-Slovenian bilateral projects (BI-JP/03/04/2, BI-JP/05-07/1)  
2001-2002 Chinese-Slovenian bilateral project (KIT-04-14/2002)  
2006-2009 Hungarian-Slovenian bilateral projects (BI-HU/06-07/001, BI-HU/08-09-004)  
1995-1997 Macedonian-Slovenian bilateral project (MAKMAT/95)  
1998-2011 Polish-Slovenian bilateral projects (SLO/POL-24(2002-2003), BI-PL/04-05-004, BI-PL/08-09-010, BI-PL/10-11-001)  
2012-2013 Romanian-Slovenian bilateral project (BI-RO/12-13-002)  
1991-2021 Russian Federation-Slovenian bilateral projects (BI-RU/05-07-004, BI-RU/08-09-002, BI-RU/10-11-002, BI-RU/12-13-001, BI-RU/14-15-001, BI-RU/16-18-002, BI-RU/19-20-009)  
2008-2010 Slovakian-Slovenian bilateral project (BI-SK/08-09-003)  
2004-2006 Spanish-Slovenian bilateral project (BI-ES/04-05-014)  
2012-2014 Turkish-Slovenian bilateral project (BI-TR/12-14-001)  
2003-2012 Ukrainian-Slovenian bilateral projects (BI-UA/03-04-002, BI-UA/05-06-007, BI-UA/07-08-001, BI-UA/09-10-005, BI-UA/11-12-001)  
1998-2018 United States-Slovenian bilateral projects (SLO-US-2002/01, BI-US/04-05/35, BI-US/05-06/002, BI-US/06-07-003, BI-US/08-09-003, BI-US/11-12-004, BI-US/13-14-022, BI-US/16-17-005, BI-US/18-19-003)

**Refereeing:**

- for research foundations: *National Science Foundation, National Sciences and Engineering Research Council Canada, Israel Science Foundation, European Union INTAS Program, Research Foundation Flanders (Belgium), Deutsche Forschungsgemeinschaft (Germany), et al.*  
- for journals: *Journal of the American Mathematical Society, Transactions of the American Mathematical Society, Proceedings of the American Mathematical Society, Journal of Differential Equations, Nonlinearity, Advances in Calculus of Variations, Applied Mathematics Letters, Nonlinear Analysis: Real World Applications, Complex Variables and Elliptic Equations, Advances in Nonlinear Analysis, Journal of the London Mathematical Society, Inventiones Mathematicae, Mathematisches Annalen, Nonlinear Analysis: Theory, Methods & Applications, Journal of London Mathematical Society, Revista de la Real Academia de Ciencias Exactas, Fisicas y Naturales, Proceedings of the Royal Society of Edinburgh, Il Nuovo Cimento B, Mathematical Methods in the Applied Sciences, Topology and its Applications, etc.*

**Selected invited talks** (total number over **400**):

1. *Topologically based machine learning methods*, New Directions in Natural Sciences: Complexity, Machine Learning and Algorithms, Salzburg, 2020.
2. *Geometric topology of wild Cantor sets*, Glances at Manifolds, Low- and High-Dimensional, Cracow, Poland, 2015.
3. *Topological properties of Busemann G-spaces*, Geometry Meeting dedicated to the centenary of A. D. Alexandrov, Sankt-Petersburg, 2012.
4. *The Moore conjecture and related problems*, Oregon State University, Corvallis, 2011.
5. *Wild Cantor sets: New results, conjectures and questions*, Topology and Its Applications, Kyoto, 2007.
6. *New results on geometric topology of continua*, Barrett Lectures, University of Tennessee, Knoxville, 2006.
7. *On topological versions of the Helly theorem*, Topology and Its Applications, Cape Town, 2004.
8. *Homology 3-manifolds*, Exotic Homology Manifolds, Oberwolfach, 2003.
9. *Topology of 2-polyhedra in 3-manifolds*, Knots in Washington, Washington, 2000.
10. *Detecting singularities in decomposition spaces of 3-manifolds*, University of Cambridge, Cambridge, 1984.

**Selected papers** (total number over **450**):

1. Free groups as end homogeneity groups of 3-manifolds, *Rev. Mat. Iberoam.* 38:1 (2022), 113–130. (with D.J. Garity)
2. Eigenvalue problems with unbalanced growth: Nonlinear patterns and standing wave solutions, *Nonlinear Analysis, Theory, Methods and Applications* 188 (2019), 377-388. (with I. Farago)
3. Contractible 3-manifolds and the double 3-space property, *Trans. Amer. Math. Soc.* 370:3 (2018), 2039-2055. (with D.J. Garity and D.G. Wright)
4. Nonlinear second order evolution inclusions with noncoercive viscosity term, *Journal of Differential Equations* 264:7 (2018), 4749-4763. (with N. Papageorgiou and V. Radulescu)
5. A proof of the Hilbert-Smith conjecture for actions by Lipschitz maps, *Math. Ann.* 308:2 (1997), 361-364. (with E.V. Ščepin)
6. Multiple solutions for resonant problems of the Robin  $p$ -Laplacian plus an indefinite potential, *Calculus of Variations and Partial Differential Equations*, 56:3 (2017), art. 63, 23 pp. (with N. Papageorgiou and V. Radulescu)
7. Asymptotics for singular solutions of the quasilinear logistic equation with absorption term, *Journal of Mathematical Analysis and Applications* 395:1 (2012), 78-85.
8. General position properties that characterize 3-manifolds, *Canad. J. Math.* 44:2 (1992), 234-251. (with R.J. Daverman)
9. On 1-cycles and the finite dimensionality of homology 4-manifolds, *Topology* 31:3 (1992), 605-623. (with W.J.R. Mitchell and E.V. Ščepin)
10. A criterion for cellularity in a topological 4-manifold, *Proc. Amer. Math. Soc.* 100:3 (1987), 564-566.

**Selected Monographs** (total number **5**):

1. *Nonlinear Analysis: Theory and Methods*, Springer, 2019. (with N. Papageorgiou and V. Radulescu)
2. *Higher-Dimensional Generalized Manifolds: Surgery and Constructions*, European Mathematical Society, Zürich, 2016. (with A. Cavicchioli in F. Hegenbarth)

**3.** *Partial Differential Equations with Variable Exponents: Variational Methods and Qualitative Analysis*, Francis & Taylor, 2015. (with V. Radulescu)

**Homepage:** <http://repovs.fmf.uni-lj.si/>