

RNDr. Zbyněk Urban, Ph.D.

Department of Mathematics
VŠB-Technical University of Ostrava
17. listopadu 15/2172, 708 33 Ostrava-Poruba, Czech Republic
and
Lepage Research Institute, University of Prešov
17. novembra 1, 081 16 Prešov, Slovakia

Curriculum vitae

Zbyněk Urban (born 1981, Czech Republic)

Education, qualification

MSc. – Palacky University in Olomouc, Faculty of Science, Mathematics and its Applications, Mathematical Analysis (2005)
Ph.D. – University of Ostrava, Faculty of Science, Applied Mathematics, Ph.D. Advisor prof. RNDr. Demeter Krupka, DrSc. (2011)
RNDr. – Charles University in Prague, Faculty of Mathematics and Physics, Global Analysis and Differential Geometry (2012)

Positions

2010–2014 University of Pardubice, Assistant Professor, Postdoctoral fellow
2012– Lepage Research Institute, Founding member
2014–2016 University of Hradec Kralove, Assistant Professor
2016– VSB-Technical University of Ostrava, Assistant Professor, Research fellow

Research stays abroad

2005 Lecce University, Italy (2 months, invited stay, with R. Vitolo)
2009–2010 Ghent University, Belgium (9 months, Erasmus programme, with W. Sarlet)
2010 University of Surrey, United Kingdom (1 week, research stay, with P. Hydon)
2011 Beijing Institute of Technology, China (1 month, invited stay, with D. Shi)
2012 University of Surrey, United Kingdom (1 month, research stay, with P. Hydon)
2013 Univesidad del Sur, Argentina (2 months, research stay, with H. Cendra)
2016–2017 University of Presov, Slovakia (6 months, research stay, with J. Brajercik)
2017 Transilvania University of Brasov, Romania (1 week, research stay, with N. Voicu)

Pedagogical activities

2005–2009 Palacky University in Olomouc, seminars - Mathematical Analysis, Linear algebra, Differential geometry
2010–2013 University of Pardubice, lectures and seminars - Calculus, Linear algebra, Selected chapters in analysis and algebra (Functional Analysis, Complex Variable, Advanced linear algebra)
2014–2016 University of Hradec Kralove, lectures and seminars - Geometry, Graph Theory
2016– VŠB-Technical University of Ostrava, lectures and seminars - Calculus

Textbooks

- Z. Urban, Introduction to calculus of one variable, in Czech, e-publication VSB-TUO, 2018.
- Electronic transcript of: D. Krupka, Introduction to analysis on manifolds, in Czech, SPN Praha, 1986.

Organizing activities

- coorganizer of annual international meeting „Summer School on Global Analysis and Applications“ (2006–2018), <http://www.lepageri.eu/summer-school>
- secretary of organizing committee of the international conference DGA 2007 „Differential Geometry and its Applications“, 2007, Olomouc, Czech Republic), <http://dga2007.upol.cz/>
- organizing activities at the Lepage Research Institute (international research organization)

Scientific activities

Research fields: Global analysis, Calculus of variations, Differential geometry, Geometric methods in physics

Main results: Global variational principles on Grassmannians, Homogeneous variational functionals and homogeneous variational equations, Metrizable problem for invariant affine connections

Publications: Author/coauthor of 18 scientific papers (11 impacted) in international journals or proceedings, 2 monograph chapters.

Web of Science: 12 publications, h-index 4, citations 40, citations without self-citations 20

Scopus: 11 publications, h-index 3, citations 33, citations without self-citations 19

Google Scholar: 18 publications, citations without self-citations 30

List of Publications: <http://www.lepageri.eu/files/Urban-Publications.pdf>

Grants

- Mathematical Models and Structures MSM 6198959214, 2005–2011, coordinated by prof. D. Krupka at Palacký University (team member)
- GAČR 201/09/0981 Global Analysis and Geometry of Fibred Spaces, 2009–2013, coordinated by prof. D. Krupka at Palacký University (team member)
- Czech–Slovak collaboration grant MEB 080808, Global Analysis on Manifolds, coordinated by J. Brajerčík and D. Krupka, 2008–2009 (team member)
- Postdoctoral fellowship at University of Pardubice, 2012–2013, ESF-OPVK MEYS, CZ.1.07/2.3.00/30.0058 (coordinator)
- Visegrad Fund (Scientific exchange, Research), No. 11510031, at Lepage Research Institute (team member)
- SAIA research grant of the Slovak Republic, 09/2016 – 02/2017 (coordinator)
- Visegrad Fund – Visegrad Scholarship Program No. 51810810, 09/2018 – 06/2019 (coordinator)

Referee work

- International Journal of Geometric Methods of Modern Physics (World Scientific)
- Journal of Geometric Mechanics (AIMS)
- Mathematical Reviews (AMS)

Conferences / workshops

- 23rd Internat. Summer School on Global Analysis and Applications, August 20–24, 2018, Brasov, Romania (lecture: Global variational principles)
- 22nd Internat. Summer School on Global Analysis and Applications, August 21–25, 2017, Krakow, Poland (lecture: with J. Brajerčík, First-order variational theory for submanifolds: the fundamental Lepage form)
- Modern Mathematical Methods in Engineering (3mi), June 7–9, Rybnik, Poland (poster: with J. Volná, Variational equations on the Möbius strip)
- 21st International Summer School on Global Analysis and Applications, August 15–19, 2016, Poprad, Slovakia (poster: with J. Volná, The metrizable problem for Lorentz-invariant affine connections)

- 20th International Summer School on Global Analysis and Applications, August 17–21, 2015, Stara Lesna, Slovakia (lecture: Metrizable and invariant affine connections)
- Variational principles and conservation laws in General Relativity, Workshop in memory of Professor Mauro Francaviglia, June 25–26, 2015, Torino, Italy (lecture: Metrizable and invariant affine connections)
- 19th International Summer School on Global Analysis and Applications, August 25–30, 2014, Lednice, Czech Rep. (lecture: Invariant Lepage forms on Grassmann fibrations: Examples)
- 18th International Summer School on Global Analysis and Applications, August 12–17, 2013, Levoca, Slovakia (plenary lecture: The geometry of variational principles on Grassmann fibrations)
- 12th International conference Differential Geometry and its Applications, August 18–23, 2013, Brno, Czech Republic (1st lecture: A bicomplex induced by variational sequences, 2nd lecture: Variational sequences and geometric constraints theory)
- Colloquium on Differential Geometry and its Applications and IX-th International Conference on Finsler Extensions of Relativity Theory, August 26–30, 2013, Debrecen, Hungary (invited lecture: Invariant Lepage forms on Grassmann fibrations)
- 6th World Congress of Nonlinear Analysts, June 25 – July 1, 2012, Athens, Greece (lecture: Variational sequences on fibred velocity spaces)
- 17th International Summer School on Global Analysis and Applications, August 17–22, 2012, Levoca, Slovakia
- 16th International Summer School on Global Analysis and Applications, August 8–12, 2011, Brno, Czech Republic
- 11th International conference Differential Geometry and its Applications, August 27–31, 2010, Brno, Czech Republic (lecture: Higher-order Euler theorem and homogeneous differential equations)
- 4th International Young Researchers Workshop on Geometry, Mechanics and Control, January 11–13, 2010, Ghent, Belgium (lecture: Variational sequences in mechanics on Grassmann fibrations)
- 14th International Summer School on Global Analysis and Applications, August 10–14, 2009, Olomouc, Czech Republic
- 13th International Summer School on Global Analysis and Applications, June 23–27, 2008, Levoca, Slovakia
- II International Summer School on Geometry, Mechanics, and Control, June 9–14, 2007, La Palma, Canary Islands, Spain
- 2nd Czech-Catalan Conference in Mathematics, September 21–23, 2006, Barcelona, Spain (poster: The structure of manifolds of contact elements: Examples)
- 11th International Summer School on Global Analysis and Applications, July 30–August 5, 2006, Spisska Stara Ves, Slovakia
- 10th International Summer School on Global Analysis and Applications, September 25–October 1, 2005, Levoca, Slovakia