Contact Information

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Current Position

05/2017 – present	Researcher, Institute of Mathematics of the Czech Academy of Sciences

Previous Employments

01/2014 – 04/2017	Postdoctoral Fellow, Institute of Mathematics of the Czech Academy of Sciences
10/2016 – 03/2017	Postdoctoral Fellow, The University of Warsaw, Faculty of Mathematics, Informatics and Mechanics
09/2013 – 12/2014	Assistant Professor, University of Economics, Prague, Faculty of Informatics and Statistics

Fellowships

2014 – 2015	Support Programme for the Perspective Human Resources, founded by the Czech Academy of Sciences

Education and Degrees

Ph.D. (2013)	Charles University in Prague, Faculty of Mathematics and Physics, PhD thesis *Applications of descriptive set theory in mathematical analysis*, supervisor Miroslav Zelený
Mgr. (2009)	Charles University in Prague, Faculty of Mathematics and Physics, Diploma thesis *Infinite games and their applications*, supervisor Miroslav Zelený
Bc. (2007)	Charles University in Prague, Faculty of Mathematics and Physics, Bachelor's thesis *Křivky Peanova typu* (in Czech), supervisor Jaroslav Lukeš

Research Visits

08/2016 – 09/2016	The University of Auckland, New Zealand

Research Projects

2020 – 2022	*Banach spaces of continuous and Lipschitz functions*, Grant number 20-22230L by the Austrian Science Foundation and the Czech Science Foudation, role: team member
2018 – 2021	*Graph limits and inhomogeneous random graphs*, Grant number 18-01472Y by the Czech Science Foundation, role: team member
2017 – 2019	*Generic objects*, Grant number 17-27844S by the Czech Science Foundation, role: team member
2016 – 2018	*Nonlinear analysis in Banach spaces*, Grant number GA16-07378S by the Czech Science Foundation, role: team member

2012 – 2016	*Asymptotics of Operator Semigroups*, Marie Curie Action 'International Research Staff Exchange Scheme' awarded by the European Commission
2010 – 2012	*Applications of descriptive set theory in mathematical analysis*, Grant number 149410 by the Charles University Grant Agency, role: leader

Awards

2017	Otto Wichterle Award for young researchers, awarded by the Czech Academy of Sciences
2009	First place in the competition SVOČ (competition of students from Czech and Slovak universities in scientific activity in mathematics)
2008 – 2009	Award of the Dean of the Faculty of Mathematics and Physics for the best diploma thesis

Teaching

2016 – 2017	University of Warsaw, Faculty of Economic Sciences, problem solving sessions in a basic course in linear algebra
2013 – 2014	University of Economics, Prague, Faculty of Informatics and Statistics, problem solving sessions in a basic course in calculus and linear algebra
2008 – 2013	Charles University in Prague, Faculty of Mathematics and Physics, problem solving sessions in basic courses in calculus

Publication Activity

WoS:	19 publications, 36 citations, H-index 3
Scopus:	19 publications, 44 citations, H-index 3

Research Profile

Graph limits, descriptive set theory, real and functional analysis, topology, sigma-ideals of small sets

Other Professional Activities

• Vice-head of the Abstract Analysis Department, Institute of Mathematics of the Czech Academy of Sciences
• Secretary of the Supervisory Board, Institute of Mathematics of the Czech Academy of Sciences
• Organizing: Seminar Set Theory and Analysis, Institute of Mathematics of the Czech Academy of Sciences
• Member of the HRS4R Advisory Committee, Institute of Mathematics CAS goes for HR Award
• Expert reviews for Ministry of Education, Youth and Sports, programm Mobility
• Preparing review reports for journals: Combinatorics, Probability and Computing; Topology and its Applications; Combinatorica; Journal of Mathematical Analysis and Applications; Real Analysis Exchange; Hacettepe Journal of Mathematics and Statistics
• Preparing reviews for MathSciNet

Conference Talks

• 36th International Summer Conference on Real Functions Theory, Stará Lesná, Slovakia, 09/2022
• 44th Summer Symposium in Real Analysis, Paris & Orsay, France, 06/2022
• Inspirations in Real Analysis, Bedlewo, Poland, 04/2022
• Winter School in Abstract Analysis, Svratka, Czech Republic, 01/2022
• Winter School in Abstract Analysis, Svratka, Czech Republic, 01/2020
• The Alamo Symposium, San Antonio, Texas, USA, 06/2019
• Současné trendy teoretické informatiky, Prague, Czech Republic, 06/2019
• Winter School in Abstract Analysis, Svratka, Czech Republic, 01/2019
• Summer Symposium in Real Analysis XLII, Saint-Petersburg, Russian Federation, 06/2018
• Workshop Graph limits in Bohemian Switzerland, Janov, Czech Republic, 03/2018
• Set Theoretic Methods in Topology and Analysis, Bedlewo, Poland, 09/2017
• Summer Symposium in Real Analysis XLI, Wooster, Ohio, USA, 06/2017
• Interactions between Algebra and Functional Analysis, Prague, Czech Republic, 09/2016
• Winter School in Abstract Analysis, Svratka, Czech Republic, 01/2016
• Winter School in Abstract Analysis, Svratka, Czech Republic, 01/2015
• Interactions between Algebra and Functional Analysis, Prague, Czech Republic, 12/2014
• Joint Prague-Vienna Logic & Set Theory Meeting, Prague, Czech Republic, 12/2014
• Summer Symposium in Real Analysis XXXV, Budapest, Hungary, 06/2011
• Week of doctoral students, Prague, Czech Republic, 06/2010
• Winter School in Abstract Analysis, Kácov, Czech Republic, 01/2009
• Winter School in Abstract Analysis, Lhota nad Rohanovem, Czech Republic, 01/2008

Invited Seminar Talks

• Banach spaces webinars: online, May 20, 2022
• Seminar on Real and Abstract Analysis: Charles University, Faculty of Mathematics and Physics, Department of Mathematical Analysis, May 5, 2021
• Noon Seminar: Charles University, Faculty of Mathematics and Physics, Department of Applied Mathematics, November 15, 2015

Publications and Preprints

[23] M. Cúth, M. Doležal, M. Doucha, O. Kurka: *Polish spaces of Banach spaces. Complexity of isometry and isomorphic classes.* Submitted.

[22] M. Cúth, M. Doležal, M. Doucha, O. Kurka: *Polish spaces of Banach spaces.* Forum of Mathematics, Sigma, 10 (2022).

[21] M. Doležal, J. Grebík, J. Hladký, I. Rocha, V. Rozhoň: *Cut distance identifying graphon parameters over weak* limits.* J. Combin. Theory Ser. A 189 (2022), Paper No. 105615, 57 pp.

[20] M. Doležal: *Graph limits: An alternative approach to s-graphons.* J. Graph Theory 99 (2022), no. 1, 90–106.

[19] M. Doležal, J. Hladký, J. Kolář, T. Mitsis, C. Pelekis, V. Vlasák: *A Turán-type theorem for large-distance graphs in Euclidean spaces, and related isodiametric problems.* Discrete Comput. Geom. 66 (2021), no. 1, 281–300.

[18] M. Doležal, J. Grebík, J. Hladký, I. Rocha, V. Rozhoň: *Relating the cut distance and the weak* topology for graphons.* J. Combin. Theory Ser. B 147 (2021), 252–298.

[17] M. Doležal, J. Hladký: *Matching polytons.* Electron. J. Combin. 26 (2019), no. 4, Paper No. 4.38, 33 pp.

[16] M. Doležal, T. Mitsis, C. Pelekis: *The de Bruijn–Erdős theorem from a Hausdorff measure point of view.* Acta Math. Hungar. 159 (2019), no. 2, 400–413.

[15] M. Doležal, J. Hladký, J. Kolář, T. Mitsis, C. Pelekis, V. Vlasák: *A Turán-type theorem for large-distance graphs in Euclidean spaces, and related isodiametric problems.* Acta Math. Univ. Comenian. (N.S.) 88 (2019), no. 3, 625–629.

[14] M. Doležal, J. Hladký: *Cut-norm and entropy minimization over weak* limits.* J. Combin. Theory Ser. B 137 (2019), 232–263.

[13] M. Doležal, J. Hladký, P. Hu, D. Piguet: *First steps in combinatorial optimization on graphons: matchings.* Drmota, Michael (ed.) et al., Extended abstracts of the ninth European conference on combinatorics, graph theory and applications, EuroComb 2017, Vienna, Austria, August 28 – September 1, 2017. Amsterdam: Elsevier. Electronic Notes in Discrete Mathematics 61, 359-365 (2017).

[12] M. Doležal, W. B. Moors: *On a certain generalization of W-spaces.* Topology Appl. 231 (2017), 1–9.

[11] M. Doležal, J. Hladký, A. Máthé: *Cliques in dense inhomogeneous random graphs.* Random Structures Algorithms 51 (2017), no. 2, 275–314.

[10] M. Doležal, V. Vlasák: *Haar meager sets, their hulls, and relationship to compact sets.* J. Math. Anal. Appl. 446 (2017), no. 1, 852–863.

[9] M. Doležal, W. Kubiś: *Perfect independent sets with respect to infinitely many relations.* Arch. Math. Logic 55 (2016), no. 7-8, 847–856.

[8] M. Doležal, D. Preiss, M. Zelený: *Infinite games and σ-porosity.* Israel J. Math. 215 (2016), no. 1, 441–457.

[7] M. Doležal, M. Rmoutil, B. Vejnar, V. Vlasák: *Haar meager sets revisited.* J. Math. Anal. Appl. 440 (2016), no. 2, 922–939.

[6] M. Doležal, B. Vejnar: *Classification of the spaces $C_p^*(X)$ within the Borel-Wadge hierarchy for a projective space X.* Topology Appl. 183 (2015), 11–17.

[5] M. Doležal: *Unitary representations of finite abelian groups realizable by an action.* Topology Appl. 164 (2014), 87–94.

[4] M. Doležal, P. Ludvík, P. Pošta, P. Pyrih, M. Rmoutil, B. Vejnar: *Arcwise connected continuum with a free arc and with the fixed set property for monotone onto maps.* Questions Answers Gen. Topology 30 (2012), no. 2, 135–137.

[3] M. Doležal: *Characterization of σ-porosity via an infinite game.* Fund. Math. 216 (2012), no. 2, 109–118.

[2] M. Doležal, P. Pošta, P. Pyrih, M. Rmoutil, B. Vejnar: *Chain of dendrites without monotone supremum.* Questions Answers Gen. Topology 29 (2011), no. 2, 131–133.

[1] M. Doležal: *A note on the three-segment problem.* Math. Bohem. 134 (2009), no. 2, 211–215.