

CURRICULUM VITAE

Personal Information

Name: BOBAN VELIČKOVIĆ
Sex: Male
Home address: 24 rue Berthollet, 75005 Paris, France
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Degrees

Ph.D.	University of Wisconsin “Contributions to combinatorial set theory” Thesis advisor: Professor Kenneth Kunen	1986
B. Sc.	Belgrade University	1982

Current Position Professor, UFR de Mathématiques, Université de Paris 7

Previous Employment

- Associate Professor at the Carnegie Mellon University, Pittsburgh, Jan. 1994 - Jan. 1995
- N.S.E.R.C. International Fellow, York University, Toronto, Jan. 1992 - Jan. 1994
- C. Morey Assistant Professor at the University of California, Berkeley
Aug. 1988 - Aug. 1989 and Aug. 1990 - Aug. 1991
- Postdoctoral Fellow at the Math Sciences Research Institute, Berkeley Aug. 1989 - Aug. 1990
- Bateman Research Instructor at the California Institute of Technology, Sept. 1986 - Aug. 1988
- Teaching and Research Assistant at the University of Wisconsin, Jan. 1983 - Aug. 1986

Research Interests

- Combinatorial Set Theory: forcing axioms, Ramsey theory, cardinal arithmetic
- Descriptive Set Theory: definable equivalence relations, classification problems
- Games and infinitary languages
- Theoretical Computer Science and Complexity Theory

Recent Visiting Positions

- Associate Professor at the University of Bonn, June - August 1993
- Professor at Ecole Normale Supérieure, Paris, June 1994
- Member of the International Computer Science Institute, Berkeley, Nov.- Dec. 1995
- Member of the Fields Institute, Toronto, November 1996
- Visiting Member of DIMACS, Rutgers University, October 1997
- Visiting Scholar, Caltech, November 1997
- Visiting Scholar, Humboldt University, Berlin, November 1998
- Visiting Researcher, University of Helsinki, Finland, November 1999
- Visiting Researcher, Mittag Leffler Institute, Stockholm, November 2000
- Visiting Researcher, University of Helsinki, Finland, October 2001
- Visiting Professor, Caltech, Pasadena, CA, USA, November 2001
- Visiting Researcher, Fields Institute, University of Toronto, Canada, October 2002
- Visiting Professor, University of Wisconsin, Madison, WI, USA, November 2002
- Visiting Professor, Rutgers University, Piscataway, NJ, USA, October 2003
- Visiting Scholar, CRM Universidad Autonoma de Barcelona, November 2003
- Senior Research Fellow, Schrödinger Institute, Vienna, Austria, October - December 2004
- Invited Professor, University of Helsinki, Finland, October - November 2005
- Visiting Scholar, Rutgers University, Piscataway, NJ, USA, October 2006
- Visiting Professor, Caltech, Pasadena, CA, USA, November 2007
- Visiting Scholar, Institut Mittag Leffler, Stockholm, Sweden, October 2009

Organization of Conferences

- Logic Colloquium 1998, Prague, August 1998, (Special Session in Set Theory, with Lev Bukovsky)
- 5th International Workshop in Set Theory, Luminy, France, September 1998
(with P. Dehornoy, A. Louveau and S. Todorcevic)
- Logic Colloquium 2000, Paris, July 2000, (member of the Organizing Committee)
- 6th International Workshop in Set Theory, CIRM, Luminy, France, September 2000
- Logic Colloquium 2001, Vienna, August 2001, (member of the Program Committee)
- 7th International Workshop in Set Theory, CIRM, Luminy, France, September 2002
- 8th International Workshop in Set Theory, CIRM, Luminy, France, September 2004
- Set Theory and Analysis, (with A. Andretta and S. Friedman), Torino, Italy, July 10-12 2006
- 9th International Workshop in Set Theory, (with A. Louveau),
CIRM, Luminy, France, October 2-6 2006
- 1st European Set Theory Meeting, (with B. Löwe, G. Plebanek et J. Väänänen),
Mathematical Research Center, Bedlewo, Poland, July 9-13 2007
- 10th International Workshop in Set Theory, (with A. Louveau),
CIRM, Luminy, France, September 22-26 2008
- 2nd European Set Theory Meeting, (with G. Plebanek, R. Schindler et J. Väänänen),
Mathematical Research Center, Bedlewo, Pologne, July 5-10 2009

Recent Invited Lectures

- Workshop in Set Theory, Oberwolfach, Germany, January 1996
- 4th International Workshop in Set Theory, Marseille, France, September 1996
- 5th International Workshop in Set Theory, Luminy, Marseille, France, September 1998
- Winter Workshop on Abstract Analysis, February 1999, Česka Lipa, Czech Republic, mini course 'Infinite Dimensional Ramsey Theory'
- Algebra and Discrete Mathematics, (European Research Conference), Hattingen, Germany, June 26 -July 2 1999
- Mid Atlantic Mathematical Logic Seminar, Rutgers University, New Jersey, October 1999
- 6th International Workshop in Set Theory, Luminy, Marseille, France, September 2000
- Bonn Set Theory Meeting, University of Bonn, Germany, January 2001
- Mid Atlantic Mathematical Logic Seminar, Rutgers University, New Jersey, February 2001
- Workshop in Set Theory, Oberwolfach, Germany, January 2002
- The Barcelona Conference on Set Theory, Centre de Recerca Matemàtica Universitat Autònoma de Barcelona, Bellaterra, September 16-20, 2003
- 8ème International Workshop in Set Theory, CIRM, Luminy, September 20-24 2004
- Logic in Hungary, Budapest, Hungary, August 5-10 2005
- Workshop in Set Theory, Oberwolfach, Allemagne 5-9 décembre 2005
- 1st Franco-Chinese Mathematics Conference, Zhuhai, China, December 12-18 2005
- Boise Extravaganza in Set Theory, Boise, Idaho, USA, March 31 - April 2 2006
- Methods of Logic in Mathematics, Euler Mathematical Institute, St Petersburg, Russia June 1-7 2006
- Games in Language, Logic and Computation 12, Amsterdam, The Netherlands, June 14 2006
- Logic Colloquium 2006, Nijmegen, The Netherlands, July 27 - August 2 2006,
mini cours of 3 lectures
- DMV Tagung 2006, Mini Symposium 16 - Set Theory, Bonn, Germany, September 21-22 2006
- Mid Atlantic Mathematical Logic Seminar, Rutgers, New Brunswick, USA, October 14 2006
- The CUNY Logic Seminar, Graduate Center, CUNY, New York, USA, October 20 2006
- UCLA Logic Colloquium, UCLA, Los Angeles, CA, USA, October 27 2006
- UC Irvine Logic/Set Theory Seminar, Irvine, CA, USA, October 30 2006
- Kolloquium zur Mathematischen Logik, Université de Münster, Germany, November 20 2006
- UCLA Logic Colloquium, UCLA, Los Angeles, USA, November 16 2007
- UltraMath 2008, Applications of ultrafilters and ultraproducts in mathematics, Pise, Italy, June 1-7 2008
- E. W. Beth Centenary Minisymposium on Mathematical Logic, 5th European Congress of Mathematicians, Amsterdam, The Netherlands, July 14-18 2008
- 3rd Franco-Chinese Mathematics Conference, Group theory and representation theory Guangzhou, China, December 1-5 2008
- Kunenfest, Conference in honor of K. Kunen, Madison, WI, USA, April 3-5 2009
- Young Set Theory Workshop, (**minicourse**), CRM, Barcelone, Spain, April 14-18 2009
- ESI Workshop on Large Cardinals and Descriptive Set Theory, Vienna, Austria, June 14-27 2009
- 2nd European Set Theory Meeting, Bedlewo, Poland, July 5-10 2009

Research Support

- Binational Research Grant (PAI), France - Austria, Program Amadeus, No. 03777ZF with S. Friedman, 2002-2003
- Binational Research Grant, (PAI), France - Serbia, Program Pavle Savic No. 07947PL 2004-2005, with M. Kurilic
- Binational Research Grant, (PAI), France - U.K., Program Alliance, No. 08748WM 2005-2006, with M. Dzamonja, Univ. of East Anglia, Norwich
- Binational Research Grant, (PHC), France - Spain, Program Picasso, No. 10820SD 2006-2007, with J. Bagaria, ICREA, Barcelona
- Binational Research Grant, (PHC), France - Germany, Program Procope, No. 17892ND 2008-2009, with R. Schindler, University of Münster, Germany

Teaching Experience

- Calculus at the University of Wisconsin, Madison, 1983-86
- Introduction to Mathematical Logic at Caltech, 1986/87
- Discrete Mathematics at Caltech, 1986/87
- Computability theory at Caltech, 1987/88
- Introduction to Algebra at U.C. Berkeley, 1988/89
- Calculus at U.C. Berkeley, 1988/89
- Combinatorics, (graduate course) at U.C. Berkeley, 1988/89
- Set Theory, (graduate course) at U.C. Berkeley, 1990/91
- Introduction to Algebra, Carnegie Mellon University, 1994
- Set Theory, (graduate course), Carnegie Mellon University, 1994
- Measure Theory and Integration, Université de Paris 7, Spring 1995 and 1996
- Complexity Theory, (graduate course), Université de Paris 7, Spring 1995
- Set Theory (graduate course), Université de Paris 7, Spring 1996, 2001
- Calculus, (1st undergraduate year course), Université de Paris 7, Spring 1998 and 1999
- Infinite Dimensional Ramsey, graduate course, Université de Paris 7, Spring 1999 and 2000
- Logic 2, (4th year undergraduate course), Université de Paris 7, Spring 2000, 2001 and 2002
- Théorie de Ramsey de dimension infinie, (DEA de Math et DEA de Logique at Paris 7)
- Set Theory, Université de Paris 7, (graduate course), Spring 2001, 2002 and 2003
- Algebra and Elementary Analysis, Université de Paris 7, Spring 2003 and 2004
- Probabilistic Algorithms and Complexity, 4th year course, Université de Paris 7, Spring 2004
- Cardinal arithmetic, Université de Paris 7, Master 2 in Logic, Spring 2006, 2007 et 2008
- Elementary Algebra and Analysis, Université de Paris 7, Spring 2008 and 2009
- Infinite games and determinacy, Université de Paris 7, Master 2 in Logic, Spring 2009

Graduate Students

- Sandra QUICKERT, Thèse : **Forcing and the reals**, University of Bonn, Germany, December 2002
- Matteo VIALE, Université de Paris 7 and University of Torino, September 2003 - september 2006. Thesis : **Applications of the proper forcing axiom to cardinal arithmetic**
This thesis was awarded the **Sacks prize** for the best PhD thesis in mathematical logic in 2006 by the Association for Symbolic Logic.
- Karim ER-RHAIMINI, September 2005 - present, thesis topic: **cardinal arithmetic and PCF theory**
- Rémi STRULLU, September 2007 - present, thesis topic: **forcing axioms and applications**
- Brice MINAUD, September 2007 - present, thesis topic: **applications of set theory to C^* -algebras**
- Laura FONTANELLA, September 2008 - present, thesis topic: **combinatorial set theory and forcing**

Languages

English, French, Serbian

LIST of PUBLICATIONS

1. Definable automorphisms of $\mathcal{P}(\omega)/\text{FIN}$, *Proc. of A.M.S.* vol. 96(1), (1986), pp.130-135.
2. Jensen's box principle and the Novak number of partially ordered sets, *Journal of Symbolic Logic*, vol.51(1), (1986), pp.47-58.
3. Playful Boolean algebras, *Trans. of A.M.S.*, vol. 296 (2), (1986), pp.727-740.
4. Martin's axiom and partitions, (with S. Todorcevic), *Compositio Math.* vol.63, (1987), pp.391-407.
5. Forcing axioms and stationary sets, *Advances in Mathematics*, vol.94(2), (1992), pp. 256-284
6. CCC posets of perfect trees, *Compositio Math.* vol.79, (1991), pp. 279-294.
7. Applications of the Open Coloring Axiom, dans *Set theory of the Continuum*, H. Judah, W. Just and H. Woodin, eds. Springer Verlag, Berlin, (1992), pp. 137-154
8. On deterministic approximation of DNF, (with M. Luby), *Algorithmica*, vol. 16, (1996), pp. 415-433.
9. Small discrepancy sets and small space probability distributions, (with G. Evan, O. Goldreich, M. Luby and N. Nisan), *Symposium on the Theory of Computing*, (1992), pp. 10-16
10. OCA and automorphisms of $\mathcal{P}(\omega)/\text{FIN}$, *Topology and its applications*, vol.49, (1993), pp.1-13
11. Approximating polynomials over $GF[2]$, (with M. Luby and A. Wigderson), *Structures in Complexity Theory*, (1993)
12. A note on Borel equivalence relations, (with A. Louveau), *Proc. Amer. Math. Soc.*, vol.120(1), (1994), pp.255-59
13. Complete normality and countable compactness, (with P. Nyikos, B. Shapirovskii and Z. Szentmiklóssy), *Topology Proceedings* vol.17 (1992), pp. 395-403
14. Borel partitions of infinite subtrees of a perfect tree, (with A. Louveau and S. Shelah), *Annals of Pure and Applied Logic*, vol.63, (1993), pp.271-281
15. Hereditary normality of $\gamma\mathbb{N}$, (with P. Nyikos and L. Soukup), *Topology and its applications*, vol. 65, (1995), pp. 9-19
16. Δ_1 -definability, (with S. Friedman), *Annals of Pure and Applied Logic* , vol.89, (1997), pp. 93-99

17. Nonstandard models and analytic equivalence relations, (with S. Friedman), *Proc. AMS*, vol.125(6), (1997), pp. 1807-1809
18. Complexity of reals in inner models of set theory, (avec W. H. Woodin), *Annals of Pure and Applied Logic*, vol.92, pp. 283-295
19. A note on Tsirelson type ideals, *Fundamenta Mathematica*, vol.159(3), (1999) pp. 259-268
20. Complexity of the isomorphism relation for finitely generated groups, (with S. Thomas), *Journal of Algebra*, vol.217(1), pp. 352-373
21. Analytic ideals and cofinal types, (with Alain Louveau), *Annals of Pure and Applied Logic*, vol.99(1-3), pp. 171-195
22. The asymptotic cones of finitely generated groups, (with S. Thomas), *Bulletin of the London Math Society*, vol.32, (2000), pp. 203-208
23. On the complexity of the isomorphism relation for fields of finite transcendence degree, (avec S. Thomas), *Journal of Pure and Applied Algebra*, vol.159(2-3), (2001), no. pp. 347-363
24. The basis problem for CCC posets, *Proceedings of the Hajnal Conference*, DIMACS Series in Discrete Mathematics and Theoretical Computer Science, vol.58, (2002), pp. 149-160
25. Games played on partial isomorphisms, (avec Jouko Väänänen), *Archive for Mathematical Logic* vol. 43(1), (2004), pp. 19-30
26. Collapsing functions, (avec E. Schimmerling), *Math. Logic Quarterly*, vol. 50(1), (2004), pp. 3-8.
27. CCC forcing and splitting reals, *Israel J. Math.* vol. 147, (2005), 209-220
28. Von Neumann's Problem and Large Cardinals, (with Ilijas Farah), *Bulletin of the London Mathematical Society*, vol.38 (6), (2006), pp. 907-912
29. Bounded proper forcing axiom and well orderings of the reals, (with A. Caicedo), *Mathematical Research Letters*, vol. 13(3), (2006), 393-408
30. Maharam algebras and Cohen reals, (with Ilijas Farah), *Proc. Amer. Math. Soc.* vol.135, (2007), pp. 2283-2290
31. Bounding the consistency strength of a five element linear basis, (with B. Koenig, P. Larson et J. Moore), *Israel Journal of Mathematics*, vol. 164 (1), (2008), pp. 1-18
32. Forcing axioms and cardinal arithmetic, *Proceedings of the Logic Colloquium 2006*, Lecture Notes in Logic, vol. 32, B. Cooper, H. Geuvers, A. Pillay et J. Väänänen, eds., Association for Symbolic Logic, (2009), pp. 328-360

33. Maharam algebras, *Annals of Pure and Applied Logic*, vol. 158 (3), (2009), pp. 190-202
34. PCF structures of height less than ω_3 , (avec K. Er-rhaimini), submitted to *Journal of Symbolic Logic*, 23 pages
35. Oscillations and their applications, (with L. Fontanella), preprint, 18 pages

Books

1. *Set Theory: mathematical theory of infinity*, (in serbian), (with A. Jovanovic et A. Perovic), Faculty of Mathematics, University of Belgrade, (2007), 466 pages
2. *Forcing axioms and reflections principles*, (with A. Caicedo), in preparation, 150 pages