

Curriculum Vitae

Personal information

Name: Krzysztof Krupiński

Date and place of birth: 15 May 1976, Wrocław, Poland

Affiliation: Mathematical Institute, University of Wrocław

Pl. Grunwaldzki 2/4, 50-384 Wrocław, Poland

E-mail: kkrup@math.uni.wroc.pl

Employment

2019 - : Full Professor

2016-2019: Professor

2011-2016 : “Adiunkt” with habilitation (corresponds to Associate Professor) at the University of Wrocław

2005-2011: “Adiunkt” (corresponds to Assistant Professor) at the University of Wrocław

2005-2008: Visiting Assistant Professor (postdoc) at the University of Illinois at Urbana-Champaign

2004-2005: Assistant Professor (postdoc) in the Polish Academy of Sciences

University Education/Scientific Degrees and Titles

2016: Title of Professor

2011: Habilitation degree

2004: Ph.D. degree in mathematics

2000-2004: Graduate studies in mathematics at the University of Wrocław

2000: Master of Science in theoretical mathematics

1995-2000: Undergraduate studies in theoretical mathematics at the University of Wrocław

Awards and Scholarships

2018: University of Wrocław Rector’s Award for scientific achievements in 2017

2013: W. Sierpiński Award for a series of papers concerning model theory and its connections with algebra, topology and descriptive set theory awarded by the Third Department of the Polish Academy of Sciences

2011: University of Wrocław Rector’s Award for scientific achievements in 2010

2011: Habilitation cum laude

2010-2013: Scholarship of the Polish Minister of Science and Higher Education for outstanding young scientists

2008-2010: Habilitation scholarship

2007: G. Białkowski Award for the best Ph.D. thesis in mathematics defended in Poland in years 2004-2006 awarded by the ‘Towarzystwo Popierania i Krzewienia Nauk’ (the society supporting Polish science) and the Foundation for Polish Science

2006: K. Kuratowski Award for young mathematicians awarded by the Polish Mathematical Society and the Institute of Mathematics of the Polish Academy of Sciences

2005: Polish Education Minister’s Award for Ph.D. thesis

2005: Scholarship of the Foundation for Polish Science for the best young scientists

2004: Ph.D. cum laude

2004: Stanisław Saks Scholarship for the best Ph.D. students awarded by the Wrocław Mathematicians’ Foundation

2003: Scholarship of the Institute of Mathematics of the Polish Academy of Sciences for distinguished Ph.D. students

2000: Third prize in the J. Marcinkiewicz Competition for the best Master's thesis in Mathematics

1997-2000: Education Minister's scholarships for outstanding achievements in mathematical studies

1996: Scholarship of the Wrocław Mathematicians' Foundation

1995: "Primus Inter Pares Award" for special achievements in high school

1995: Silver medal in the competition for high school students for the best mathematical paper organized by the Polish mathematical journal "Delta"

1995: Laureate in the 18th Austrian-Polish Mathematical Competition in Vienna

1994: Bronze medal in the 35th International Mathematical Olympiad in Hong-Kong

1994, 1995: Education Minister's scholarships for outstanding achievements in mathematics at school

1993-1995: Awards in the XLIV, XLV and XLVI Polish Mathematical Olympiad

1992-1995: Scholarship of the Polish Children's Found

1991: First award in the Mathematical Competition for primary schools

Participation in grants

2019-2022: NCN (National Science Centre) grant 2018/31/B/ST1/00357; chair: P. Kowalski

2017-2022: NCN (National Science Centre) grant 2016/22/E/ST1/00450; chair: K. Krupiński

2016-2019: NCN (National Science Centre) grant 2015/19/B/ST1/01151; chair: K. Krupiński

2013-2016: NCN (National Science Centre) grant 2012/07/B/ST1/03513; chair: K. Krupiński

2010-2013: Polish Government grant N N201 545938; chair: L. Newelski

2007-2010: Visiting Fellow in the EPSRC grant EP/F009712/1; chair: A. Pillay

2007-2010: Polish Government grant N201 032/2231; chair: L. Newelski

2006-2008: Reduction of teaching duties during the postdoc at UIUC sponsored by the NSF grant DMS 0300639; chairs: A. Pillay and C. W. Henson

2003-2004: Grant from KBN (the Polish Government Committee for Scientific Research) for research on Ph.D. thesis; chair: L. Newelski

Memberships

2013 - 2017: Member of the committee of the K. Kuratowski Award chosen by the Polish Mathematical Society

Theses

Groups and fields interpretable in rosy theories: Habilitation dissertation, 2010.

Profinite structures with various model theoretic properties: Ph.D. thesis, 2004.

Properties of minimal fields: Master's thesis, 2000.

Publications

1. *On bounded type-definable equivalence relations* (with L. Newelski), Notre Dame Journal of Formal Logic (43), 231-242, 2002.

2. *Products of finite abelian groups as profinite groups*, Journal of Algebra (288), 556-582, 2005.

3. *Abelian profinite groups*, Fundamenta Mathematicae (185), 41-59, 2005.

4. *A special thin type* (with T. Blossier), Illinois Journal of Mathematics (49), 281-290, 2005.
5. *Profinite structures interpretable in fields*, Annals of Pure and Applied Logic (142), 19-54, 2006.
6. *Small profinite groups and rings* (with F. Wagner), Journal of Algebra (306), 494-506, 2006.
7. *Superrosy dependent groups having finitely satisfiable generics* (with C. Ealy and A. Pillay), Annals of Pure and Applied Logic (151), 1-21, 2008.
8. *Fields interpretable in rosy theories*, Israel Journal of Mathematics (175), 421-444, 2010.
9. *Some model theory of Polish structures*, Transactions of the American Mathematical Society (362), 3499-3533, 2010.
10. *Fields interpretable in superrosy groups with NIP (the non-solvable case)*, Journal of Symbolic Logic (75), 372-386, 2010.
11. *Generalizations of small profinite structures*, Journal of Symbolic Logic (75), 1147-1175, 2010.
12. *On stable fields and weight* (with A. Pillay), Journal of the Institute of Mathematics of Jussieu (10), 349-358, 2011.
13. *On relationships between algebraic properties of groups and rings in some model-theoretic contexts*, Journal of Symbolic Logic (76), 1403-1417, 2011.
14. *On ω -categorical groups and rings with NIP*, Proceedings of the American Mathematical Society (140), 2501-2512, 2012.
15. *On ω -categorical, generically stable groups* (with J. Dobrowolski), Journal of Symbolic Logic (77), 1047-1056, 2012.
16. *On ω -categorical, generically stable groups and rings* (with J. Dobrowolski), Annals of Pure and Applied Logic (164), 802-812, 2013.
17. *Small, nm-stable compact G -groups* (with F. Wagner), Israel Journal of Mathematics (194), 907-933, 2013.
18. *Around Podewski's conjecture* (with P. Tanović and F. Wagner), Fundamenta Mathematicae (222), 175-193, 2013.
19. *Borel equivalence relations and Lascar strong types* (with A. Pillay and S. Solecki), Journal of Mathematical Logic (13), 1350008 (37 pages), 2013.
20. *Locally finite profinite rings* (with J. Dobrowolski), Journal of Algebra (401), 161-178, 2014.
21. *On regular groups and fields* (with T. Gogacz), Journal of Symbolic Logic (79), 826-844, 2014..
22. *Superrosy fields and valuations*, Annals of Pure and Applied Logic (166), 342-357, 2015.
23. *On model-theoretic connected components in some group extensions* (with J. Gismatullin), Journal of Mathematical Logic (15), 1550009 (51 pages), 2015.
24. *Smoothness of bounded invariant equivalence relations* (with T. Rzepecki), Journal of Symbolic Logic (81), 326-356, 2016.
25. *Generalized Bohr compactification and model-theoretic connected components* (with A. Pillay), Mathematical Proceedings of the Cambridge Philosophical Society (163), 219-249, 2017.
26. *Definable topological dynamics* (82), 1080-1105, 2017.
27. *Topological dynamics and the complexity of strong types*, (with A. Pillay and T. Rzepecki), Israel Journal of Mathematics (228), 863-932, 2018.
28. *Amenability, definable groups, and automorphism groups*, (with A. Pillay), Advances

in Mathematics (345), 1253-1299, 2019.

29. *Boundedness and absoluteness of some dynamical invariants in model theory*, (with L. Newelski and P. Simon), Journal of Mathematical Logic (19), 1950012 (55 pages), 2019.

30. *Galois groups as quotients of Polish groups*, (with T. Rzepecki), Journal of Mathematical Logic, accepted (48 pages).

31. *Amenability and definability*, (with E. Hrushovski and A. Pillay), submitted (70 pages).

32. *On the topological dynamics of automorphism groups; a model-theoretic perspective*, (with A. Pillay), submitted (24 pages).

33. *Ramsey theory and topological dynamics for first order theories*, (with z J. Lee and S. Moconja), submitted (65 stron).

Work in progress

1. Topological dynamics and Ramsey theory in model theory (with J. Lee, S. Moconja, A. Onshuus, A. Pillay, P. Simon).

2. Bounded invariant equivalence relations (with I. Kaplan and T. Rzepecki).

3. Measures and model theory (with A. Chernikov, E. Hrushovski and A. Pillay).

4. ω -categorical groups (with D. Macpherson).

5. Quasi-minimal structures (with S. Moconja).

6. Model-theoretic connected components (with J. Gismatullin and G. Jagiella).

Conferences and others

a) Invited talks/participations:

2019: “Chinese Annual Conference on Mathematical Logic”, Chongqing, China, 1 hour talk.

2019: “Jubileuszowy zjazd PTM”, Kraków, Poland, 30 minute talk in the session “Logika i informatyka teoretyczna”.

2019: “Graduate students’ workshop on algebra, logic and analysis”, Szczecin, Poland, tutorial (2 x 60 minutes).

2019: Conference “VIG 2019: 50th anniversary of the 1967-68 UCLA Logic Year”, Los Angeles, USA, 1 hour talk.

2019: “Workshop on NIP and groups”, Leeds, UK, 1 hour talk.

2018: Conference “Logic and Algorithms in Group Theory”, Bonn, 1 hour talk.

2018: Workshop “Neostability Theory”, Oaxaca, Mexico, 1 hour talk.

2018: Conference “Regional Days in Model Theory and Applications”, Muenster, 90 minute talk.

2018: Conference “Model Theory and Applications”, Paris, 1 hour talk.

2017: Conference and workshop “Set theoretical and topological methods in model theory”, Tezpur, India: tutorial (5 hours) “On topological dynamics in model theory”.

2017: Workshop “Model theory and dynamics”, Villa de Leyva, Colombia, 60 minute talk.

2016: “Thematic Program on Model Theory”, Notre Dame, USA: mini-course (4 hours) “Topological Dynamics and Model Theory”.

2016: Workshop “Model theory: groups, geometry, and combinatorics”, Oberwolfach.

2015: Workshop “Neostability Theory”, Oaxaca, Mexico, 45 minute talk.

2014: Conference “MidWest Model Theory Day”, Chicago, USA, one-hour talk.

2014: Conference “Models and Groups III”, Istanbul, Turcja, 75 minute talk.

2014: Classification Theory Workshop, Daejeon, South Korea, one-hour talk.

2014: Conference “Recent developments in the applications of model theory to algebraic,

analytic and diophantine geometry”, Edinburgh.

2014: ASL Annual Meeting, Boulder, Colorado: 40 minute talk during special session in model theory.

2013: Conference “Mostowski 100”, Warszawa: one-hour talk.

2013: Conference “ 5 Forum Matematyków Polskich”, Rzeszów: plenary (45 minute) talk.

2013: Conference “The 9-th International Algebraic Conference in Ukraine”, Lviv: 45 minute talk.

2013: Workshop: “Model Theory: Groups, Geometry and Combinatorics”, Oberwolfach: 30 minute talk.

2012: Conference “Antalya Algebra Days XIV”, Cesme: one-hour talk.

2012: Workshop “Neostability Theory”, Banff: 45 minute talk.

2011: Mini-school in model theory, Turin: 40 minute talk.

2010: Workshop “Around Valued Fields and Dependent Theories”, Oberwolfach: one-hour talk.

2009: Conference “Model Theory”, Bedlewo: 30 minute talk.

2009: Conference “Logicum Urbanae Lugduni”, Lyon: one-hour talk.

2009: Workshop “Stability Theoretic Methods in Unstable Theories”, Banff.

2008: Logic Colloquium 2008, Bern: 45 minute talk during special session in model theory.

2008: Conference “Around Classification Theory”, Leeds: one-hour talk.

2008: Logic Colloquium talk at UCLA, Los Angeles.

2007: Workshop “Model Theory and Groups”, Oberwolfach: 30 minute talk.

2006: ASL Annual Meeting, Montreal: a talk during special session in model theory.

b) Conferences with a contributed talk: Logic Colloquium 2005 (Athens), Logic Colloquium 2004 (Torino), Logic Colloquium 2003 (Helsinki), “Groups and Group Rings” (Wisła 2003), Logic Colloquium 2002 (Muenster), “Simple Theories” (Marseille 2002), Logic Colloquium 2001 (Vienna).

c) Conferences without a talk: Conference “22nd Colloquiumfes” (Prague, 2019), Logic Colloquium 2019 (Prague), Workshop “Model Theory and Combinatorics” (Paris 2018), Conference “Model theory” (Bedlewo 2017), Conference “Model theory in Wrocław 2017” (Wrocław 2017), Conference “When topological dynamics meets model theory” (Marseille 2015), Conference “Model theory in geometry and arithmetic” (Berkeley 2014), Conference “Model Theory 2013” (Ravello 2013), Conference “Model theory of groups (interactions between model theory and geometrical group theory)” (Luminy 2011), Logic Colloquium 2011 (Barcelona), Conference “Recent developments in model theory” (Oleron 2011), Logic Colloquium 2010 (Paris), “Model Theory in Wrocław” (Wrocław 2009), Final MODNET Conference (Barcelona 2008), Model Theory Midwest Meeting (Chicago 2008), “Logic and Mathematics” (Urbana 2008), Logic Colloquium 2007 (Wrocław), Model Theory Midwest Meeting (Columbus 2005), “Model Theory, Algebraic and Analytic Geometry” (Cambridge 2005), “Pure Model Theory” (Norwich 2005), “An Introduction to Recent Applications of Model Theory” (Cambridge 2005), “Algebra and Discrete Mathematics” (Hattingen 2003), “Arizona Winter School” (Tucson 2003) with participation in the project “Model Theory and Diophantine Geometry”, “Model Theory and Its Applications” (Ravello 2002), Workshop on Model Theory (Barcelona 2001), Workshop on Model Theory and Tits Buildings (Wuerzburg 2000), Logic Colloquium 2000 (Paris).

d) Longer (than 1 day) visits with one or more lectures in seminars

2019: One-week visit at the Beijing Jiaotong University.

2019: One-week visit at the University of Notre Dame with one lecture and collaboration with A. Pillay.

2018: One-month participation in the trimester “Model Theory, Combinatorics and Valued fields” at the Institut Henri Poincaré in Paris.

2017: One-week visit at the University of Oxford with two lectures and collaboration with E. Hrushovski.

2015: Ten-day visit at the University of Notre Dame with one lecture and collaboration with A. Pillay.

2015: One-week visit at the University of Belgrade with one lecture and participation in the Ph.D. defense of Slavko Moconja as a referee.

2015: Three-day visit at the Université Lyon 1 with one lecture and participation as a referee in the Ph.D. defense of Adriane Kaïchouch.

2015: Three-day visit at the Università degli Studi di Torino with one lecture.

2015: One-week visit at the Hebrew University of Jerusalem with one lecture there and one lecture at Ben-Gurion University of the Negev in Beer Sheva, and collaboration with I. Kaplan.

2015: One-week visit at the University of Leeds with one lecture and cooperation with D. Macpherson.

2014: Ten-day visit at the University of Notre Dame with one lecture and collaboration with A. Pillay.

2014: Three-day visit at the University of Illinois at Urbana-Champaign with one lecture and collaboration with S. Solecki.

2013: Three-day visit at the University of Konstanz with one lecture and collaboration with S. Kuhlmann and K. Dupont.

2011: One-week visit at the Università degli Studi di Torino with one lecture and collaboration with R. Camerlo.

2010: One-week visit at the University of Leeds with one lecture and cooperation with A. Pillay and D. Macpherson.

2009: One-week visit at the University of Leeds with one lecture and cooperation with A. Pillay.

2008: Two-week visit at the Université Lyon 1 with one lecture and cooperation with F. Wagner.

2008: Five-day visit at the Università degli Studi di Torino with one lecture and collaboration with D. Zambella and R. Camerlo.

2008: Three-day visit at the University of Maryland at Collage Park with one lecture.

2008: One-week visit at the University of Leeds with one lecture and cooperation with A. Pillay.

2007: One-week visit at the University of California at Berkeley with two lectures.

2004: Two-month visit at the Université Lyon 1 with one lecture and cooperation with F. Wagner and T. Blossier.

2003: One-month visit at the University of Illinois at Urbana-Champaign with two lectures in Urbana and one lecture at the University of Illinois at Chicago.

e) One-day visits with a lecture in seminars

2019: University of Warsaw.

2017: Mathematical Institute of the Polish Academy of Sciences.

2013: Institut Henri Poincaré.

2008: University of Illinois at Chicago.

2007: University of Illinois at Chicago.

2006: University of Illinois at Chicago, University of Notre Dame, McMaster University.

2005: University of Wisconsin at Madison.

f) Membership in program committees

2019: Conference “22nd Colloquiumfest”, Prague, Czech Republic.

2019: “Jubileuszowy zjazd PTM”, Kraków: organization of the session “Podstawy matematyki, teoria mnogości i topologia ogólna”.

2017: Conference and workshop “Set theoretical and topological methods in model theory”, Tezpur, India.

2017: Conference “Model theory”, Bedlewo.

2017: Conference “Model theory in Wrocław 2017”, Wrocław.

g) Membership in organizing committees

2019: Conference “22nd Colloquiumfest”, Prague, Czech Republic.

2017: Conference “Model theory”, Bedlewo.

2017: Conference “Model theory in Wrocław 2017”, Wrocław.

2012: Conference “Model Theory in Wrocław 2012”, Wrocław.

2009: Conference “Model Theory”, Bedlewo.

2009: Conference “Model Theory in Wrocław”, Wrocław.

2007: Logic Colloquium 2007, Wrocław.

h) Guests invited to Wrocław for collaboration or talks in seminars

2019: Anand Pillay (University of Notre Dame), Jana Marikova (Western Illinois University), Clifton Ealy (western Illinois University).

2018: Todor Tsankov (Université Paris Diderot), two visits of Anand Pillay (University of Notre Dame).

2016: Anand Pillay (University of Notre Dame), Shashi Srivastava (Indian Statistical Institute, Kolkata), Slavko Moconja (University of Belgrade), Pierre Simon (Université Lyon 1).

2015: Artem Chernikov (Université Paris Diderot - Paris 7), Dugald Macpherson (University of Leeds).

2014: Maciej Malicki (SGH in Warsaw), Anand Pillay (University of Notre Dame), Itay Kaplan (Hebrew University of Jerusalem), Dugald Macpherson (University of Leeds).

2013: Anand Pillay (University of Leeds), Predrag Tanović (Mathematical Institute SANU, Belgrade, Serbia).

2011: Anand Pillay (University of Leeds).

2010: Davide Penazzi (University of Leeds), Frank Wagner (Université Lyon 1).

2009: Itai Ben-Yaccov (Université Lyon 1).

2008: Anand Pillay (University of Leeds).

Interests

I am interested in both pure model theory and its connections and interactions with algebra and topology. I am mostly experienced in:

a) topological dynamics in model theory,

b) bounded, invariant equivalence relations, in particular “spaces” of strong types, Galois groups of first order theories, model-theoretic connected components of groups,

c) measures in model theory,

d) profinite structures (in particular, small profinite groups and rings in this context); and,

more generally, Polish structures (in particular, small compact G -groups),
e) stability theory and generalizations (so-called neostability), particularly groups and fields from this point of view,
f) ω -categorical groups and rings,
g) minimal and quasi-minimal groups and fields.

Teaching experience

Topic courses with discussion sessions (in Wrocław): Profinite structures, Stability theory (twice), Stable groups (twice), Simple theories.

Reading courses (in Wrocław): Theories with NIP.

Seminars: Seminar on the paper of Hrushovski and Loeser: *Non-Archimedean tame topology and stably dominated types*, Seminar on strong theories and NTP_2 .

Other courses (in Wrocław and at UIUC): Algebra, Linear algebra, Advanced calculus, Fundamental mathematics, Mathematical logic, Applied linear algebra.

Discussion sessions (in Wrocław): Introduction to mathematics, Algebra, Abstract algebra, Linear algebra, Model theory, Model theory of fields.

Postdocs

2018-2020: Junguk Lee (South Korea)

2017-2019: Slavko Moconja (Serbia)

Former Ph.D. students

Jan Dobrowolski (Ph.D. degree received in 2015)

Tomasz Rzepecki (Ph.D. degree received in 2018)

Former Master's students

Urszula Dobrowolska (graduated in 2019)

Tomasz Rzepecki (graduated in 2014)

Jan Dobrowolski (graduated in 2011)

Tomasz Gogacz (graduated in 2011)

Former Bachelor's students

Michał Szachniewicz (graduated in 2019)

Urszula Dobrowolska (graduated in 2018)

Refereed habilitations

- **Ewa Rak:** habilitation procedure at the Silesian University, 2018. Title of the habilitation accomplishment: *Solutions of the distributivity and modularity equations for some classes of aggregation functions.*
- **Maciej Malicki:** habilitation in 2015 from the Polish Academy of Sciences. Title of the habilitation accomplishment: *Polish ultrametric spaces and their isomorphism groups.*

Refereed Ph.D. dissertations

- **Adriane Kaïchouh:** graduated in 2015 from Université Lyon 1, France under the supervision of prof. Itai Ben-Yaacov and prof. Julien Melleray, *Metric structures and*

their automorphism groups: reconstruction, homogeneity, amenability and automatic continuity.

- **Slavko Moconja**: graduated in 2015 from the University of Belgrade, Serbia under the supervision of prof. Predrag Tanović, *Asymmetric regular types*.

Refereeing or writing opinions for scientific journals (for some of them many times): Advances in Mathematics, Annals of Pure and Applied Logic, Archive for Mathematical Logic, Bulletin of the London Mathematical Society, Forum Mathematicum, Fundamenta Mathematicae, Journal of Symbolic Logic, Journal of the American Mathematical Society, Journal of the European Mathematical Society, Journal of the Institute of Mathematics of Jussieu, Journal of the London Mathematical Society, Proceedings of Logic Colloquium, Proceedings of the American Mathematical Society, Topology and its Applications.