Piotr Przytycki, curriculum vitae

Date of birth: 26.04.81
Nationality: Polish and Canadian

Academic positions
(2014–present) Assistant/Associate Professor at the Department of Mathematics and Statistics, McGill University, Burnside Hall, 805 Sherbrooke Street West, Montreal, QC, Canada H3A 0B9.
(2008 –2015) Assistant Professor at the Institute of Mathematics of the Polish Academy of Sciences, Śniadeckich 8, 00–656 Warsaw, Poland.

Webpage: http://www.math.mcgill.ca/pprzytyc

Education
1999 –2004 –undergraduate and advanced undergraduate courses in pure mathematics at the Faculty of Mathematics, Informatics and Mechanics, Warsaw University, Poland. Degree: Master of Sciences with honours.
2004 –2008 –graduate (PhD) course in pure athematics at the Faculty of Mathematics, Informatics and Mechanics, Warsaw University, Poland (up to 2006) and at the Institute of Mathematics of the Polish Academy of Sciences, Wrocław Department, Poland (from 2006). Degree: PhD with honours.

Visiting positions
2005 –Marie Curie Fellowship at the Control Training Site in SISSA, Trieste, Italy.
2008 –month stay at IHES, France.
2008 –2,5 month stay at MPI, Bonn.
2009 –2,5 month stay at Institut de Mathematiques de Toulouse.
2009 –3,5 month stay at HIM, Bonn.
2010 –2 month stay at ESI, Vienna.
2011 –year long stay at University of Illinois at Urbana-Champaign
2012 –month stay at Mittag-Leffler Institute in Sweden
2013 –2014 year long stay at Universite Paris Sud Orsay
2021 –2022 year long stay at Paris Saclay (sabbatical leave)

Grants
2007 –2008 principal investigator in the Ministry of Science and Higher Education pre-doc grant N201 003 32/0070, *Properties of systolic complexes and groups*.
2007 –2010 researcher in Jan Dymara's Ministry of Science and Higher Education grant N201 012 32/0718, *Geometric group theory and contact topology* (156720 CAD)
2010 –2013 researcher in Jan Dymara's Ministry of Science and Higher Education grant N N201 541738, *Geometric group theory and compact topology II* (283156 CAD).
2012 –2013 principal investigator in Homing Plus grant *Cubulating groups* from the Foundation for Polish Science (70028 CAD).
2012 –2013 supporting grant from the Foundation for Polish Science (10252 CAD).
2013 –2016 researcher in National Science Centre DEC-2012/06/A/ST1/00259 Maestro grant (506988 CAD).
2014 –2017 Startup grant from McGill University (40000 CAD).
2014 –2019 NSERC Discovery grant (158680 CAD).
2014 –2017 NSERC Discovery Accelerator Supplement grant (120000 CAD).

2016 –2019 researcher in (Polish) National Science Centre Harmonia grant (114993 CAD).
2017 –2019 FRQNT Nouveaux chercheurs (40000 CAD).
2019 –2024 NSERC Discovery grant (160000 CAD).
2019 –2024 researcher in (Polish) National Science Centre Harmonia grant (159390 CAD).

Awards and fellowships
1998 –Honorable Mention, XXXIX International Mathematical Olympiad in Taipei, Taiwan.
2000 –2002 Second Prize, Honorable Mention, and First Prize in 7th, 8th, 9thInternational Mathematical Competitions for University Students in London, Prague, and Warsaw.
2004 –First Prize (ex aequo with Wojciech Kryński), Marcinkiewicz Competition for the best undergraduate paper in Poland (for *Hamiltonowskie podejście do niezmienników i krzywizny*) organized by the Polish Mathematical Society.
2001 –2004 –Scholarship of the Ministry of Education.
2008 –2009 –*Start* fellowship (for young researchers) from the Foundation for Polish Science.
2008 –Wacławek Foundation award for PhD thesis.
2009 –Nominated to *The International Stefan Banach Prize for a Doctoral Dissertation in the Mathematical Sciences.*
2009 –Polish Mathematical Society award for young mathematicians.
2009 –PrimeMinister award for PhD thesis.
2009 –*Kolumb* fellowship (for the stay at UI at Urbana–Champaign in 2011) from the Foundation for Polish Science.
2011 –*Kuratowski* award for mathematicians under 30 from Polish Mathematical Society and Polish Academy of Sciences.
2011 –*Mobilność* fellowship for a stay at the University of Orsay in 2013/2014 from Ministry of Science and Higher Education.
2013 –*Wojtek Pulikowski invited lecture* at Adam Mickiewicz University.
2019 – AMS Centennial Fellowship
2021 – E.H.Moore Research Article Prize (joint with Dani Wise)

Invited talks
Conferences
2006 –International Congress of Mathematicians, Madrid, Spain. (poster)
2007 –First joint international meeting AMS–PTM, Warsaw, Poland.
2008 –Karlsruher Weihnachtsworkshop zur Geometrie und Zahlentheorie, Germany.
2009 –Geometric Group Theory Davis 60, Będlewo, Poland.
2010 –Non-positive Curvature and Geometric Structures in Group Theory, Oberwolfach, Germany.
2010 –Subgroups of mapping class groups, Bonn, Germany.
2010 –Group Actions in Topology and Geometric Group Theory, Poznań, Poland.
2011 –The Fifth Ahlfors-Bers Colloquium, Houston, Texas.
2011 –a series of conferences on geometric group theory, Columbus, Ohio.
2011 –a series of conferences on geometric group theory, Columbus, Ohio.
2011 –a series of conferences on geometric group theory, Columbus, Ohio.
2011 –3–manifolds, Artin groups and cubical geometry, New York City.
2012 –Geometric Group Theory Summer School, Park City, Utah.
2013 –Surface subgroups and cube complexes, Berkeley, California.
2013 –Geometric Structures in Group Theory, Oberwolfach, Germany,
2013 –XXIInd Rolf Nevanlinna Colloquium, Helsinki, Finland.
2013 –EPSRC Durham Symposium: Geometric and Cohomological Group Theory, Durham, UK.
2013 –Geometric and Analytic Group Theory, Ventotene, Italy.

2013 –Groupes agissant sur des espaces médians et apparentés, Orsay, France.
2014 –Hyperbolic geometry and geometric group theory, Tokyo, Japan.
2014 –Wasatch topology conference -Park City, Utah.
2015 –Geometric topology, geometric group theory, and dynamical systems, Dubrovnik, Croatia.
2015 –Geometric Group Theory, Wrocław, Poland.
2015 –PIMS Symposium on the geometry and topology of manifolds, Vancouver, Canada.
2016 –Redbud Topology Conference, Oklahoma, USA.
2016 –Shanks Workshop on Geometric Methods in Group Theory, Nashville, USA.
2016 –Groups acting on CAT(0) spaces, Berkeley, USA.
2017 –Algebraic and Geometric Combinatorics of Reflection Groups, Montreal, Canada.
2017 –Low-Dimensional Topology and Geometry, Nashville, USA.
2017 –Geometric Structures in Group Theory, Oberwolfach, Germany.
2018 –Young Geometric Group Theory VII, Les Diablerets, Switzerland.
2018 –Nonpositively Curved Groups on the Mediterranean, Nahsholim, Israel.
2019 –Topics around Groups at Tufts, Boston, USA.
2019 –LG&TBQ, Ann Arbor, USA.
2019 –Aspects of Non-Positive and Negative Curvature in Group Theory, Luminy, France.
2020 –Geometric Structures in Group Theory, Oberwolfach, Germany (virtual).
2020 –CGGT20–Workshop on Combinatorial and Geometric Group Theory, Buenos Aires, Argentina
(postponed).
2021 –Artin groups, CAT(0) geometry and related topics, Columbus, USA.
2021 –Metric Graph Theory and related topics, Luminy, France.
2022 –Groups, Topology, Applications: gran Bilbao III, Spain.
2022 –Mapping Class Groups and Out(F_n), Paris, France.
2022 –Pacific Rim Mathematical Association Congress, Vancouver, Canada.
2023 –Spring Topology and Dynamics Conference (Plenary Speaker), Rhodes College, USA (virtual).
2023 –Geometry and Topology of Artin Groups, AIM workshop, Pasadena, USA.
2024 –Geometric and Asymptotic Group Theory with Applications, Luminy, France.

Talks at seminars
Bonn (MPI), Boston College, Brandeis, Bristol, Chicago (UofC, UIC), Cornell, Daejeon (KAIST),
Edinburgh, Gdańsk, Grenoble, Lille, London (Imperial College), London (Western Ontario), Lausanne,
Louvain la-Neuve, Lyon, Milwaukee, Montpelier, Montreal (McGill, UQAM), Muenster, Orsay,
Oxford, Paris (Diderot, Jussieu, Sud, ENS), Philadelphia, Poznań, Rennes, St. Johns (Memorial),
Seoul, Stockholm (IML, KTH), Toronto, Toulouse (Paul Sabatier), Urbana-Champaign, Vienna,
Warsaw, Wrocław, Yale, Zurich.

Former students:
Marcin Kotowski (MSc program at Warsaw University, graduated 2011),
Michał Kotowski (MSc program at Warsaw University, graduated 2011),
Katarzyna Jankiewicz (MSc program at Warsaw University, graduated 2013),
Tomasz Odrzygóźdź (MSc program at Warsaw University, graduated 2013),
Tomasz Prytuła (MSc program at Warsaw University, graduated 2013),
Adam Wilks (MSc program at McGill, graduated 2016),
Christopher Smith (MSc program at McGill, graduated 2016),
Assaf Bar-Natan (MSc program at McGill, graduated 2017),
Junyu Lu (cosupervised, MSc program at McGill, graduated 2018)
Katarzyna Jankiewicz (cosupervised, PhD program at McGill, graduated 2018),
Tomasz Odrzygóźdź (cosupervised, PhD program at Polish Academy of Sciences, graduated 2019),

Zachary Munro (cosupervised, MSc program at McGill, graduated 2019),
Paul Tee (MSc program at McGill, graduated 2021),
Florestan Brunck (MSc program at McGill, graduated 2021),
Sami Douba (cosupervised, PhD program at McGill, graduated 2022),
Denali Relles (MSc program at McGill, graduated 2022),
Zachary Munro (cosupervised, PhD program at McGill, graduated 2023)

Former visiting PhD students:
Kamil Duszenko (fall 2010)
Łukasz Garncarek (spring 2012)
Richard Webb (fall 2012)
Gasper Zadnik (winter 2013)
Tomasz Prytuła (spring 2016)
Erika Kuno (fall 2016)

Current students:

Damian Orlef (cosupervised, PhD program at Polish Academy of Sciences, expected graduation 2024)
Christopher Karpinski (cosupervised, PhD program at McGill, expected graduation 2027)
Maninder Dhanauta (cosupervised, MSc program at McGill, expected graduation 2025)
Julien Cheng (cosupervised, MSc program at McGill, expected graduation 2025)
Carl Kristof-Tessier (MSc program at McGill, expected graduation 2025)
Tianyi Fan (undergraduate)

Postdocs:
Jingyin Huang (McGill, 2015-2017)
Jonah Gaster (McGill, 2017-2019)
Yann Pequignot (McGill, 2018-2019)
Annette Karrer (McGill, 2022-2023)
Harry Petyt (McGill 2023)

Undergraduate supervision:
Damian Orlef (Warsaw University, 2012-2014)
Thomas Loomis (McGill 2016-2018)
Florestan Brunck (McGill, 2017-2018)
Xianya Zhou (McGill 2019)
Yaxin Lyu (McGill 2023)
Xintong Geng (McGill 2023)
Carl Kristof-Tessier (McGill 2023)
Zhaoshen Zhai (McGill 2023)
Haoyang Guo (McGill 2023)

Conference organizing
Main organizer of "Young Geometric Group Theory Meeting", an international conference at Banach Center 2012.
Chair of the programme committee of "Young Geometric Group Theory II", Haifa 2013.
Co-organizer of 2015 Winter CMS Meeting in Montreal.
Co-organizer of Probabilistic Methods in Topology, Montreal 2016.
Co-organizer of Graphs, Surface and Cube Complexes, Warwick 2018.

Co-organizer of Simons Semester in Geometric Group Theory, Warsaw 2019 (including three conferences).
Co-organiser of Polyhedral Products in Geometric Group Theory, Toronto 2020 (virtual conference).
Co-organiser of Oberwolfach workshop on non-positively curved complexes, 2021 (virtual workshop).
Co-organiser of CRM semester in Geometric Group Theory, 2023.
Member of the scientific committee of CMS Meeting in Montreal, 2023.
Co-organiser of Combinatorial Nonpositive Curvature, Banff 2024.

Committees
2015-present Jury of the Kamil Duszenko Award

Refereeing
Advances Math., Algebraic and Geometric Topology, Asterisque, Commentari Mathematici Helvetici, Communications in Algebra, Compositio Mathematica, Discrete&Computational Geometry, Duke Mathematical Journal, Ergodic Theory and Dynamical Systems, Forum of Mathematics: Sigma, Geometriae Dedicata, Geometry and Topology, Geometry and Topology Monographs, Groups, Geometry, and Dynamics, International Mathematics Research Notices, Inventiones Mathematicae, Journal of Algebra, Journal of the Association for Math. Research, Journal of Combinatorial Theory Series A, Journal of Pure and Applied Algebra, Journal AMS, Journal fur die Reine und Angewandte Mathematik, Journal of Topology, Math. Annalen, Mathematical Reviews, Memoirs of the AMS, Michigan Mathematical Journal, New York Journal of Math., Proceedings LMS, Publ. Math. IHES, Publicacions Mathematiques, Random Structures and Algorithms, Studia Mathematica, Topology and its Applications, Transactions AMS.

Teaching experience
Recitation classes
Differential geometry I, Warsaw University 2004;
Mathematics with statistics for geographers, Warsaw University 2004;
Dynamical systems, Warsaw University 2006;
Control theory, Warsaw University 2006;
Algebraic topology II, Wrocław University 2006;
Characteristic classes, Wrocław Univerisity 2007.

Seminars
Seminar for whom math is their passion, Warsaw University 2004–2005;
Complex dynamics, Wrocław Univerisity 2007;
On the complex of curves, IMPAN, Warsaw, 2007 –2008;
Geometric group theory: the classics, IMPAN, Warsaw, 2007 –2008;
Geometric group theory, IMPAN, Warsaw, 2010, 2012 –2013;
Trees, IMPAN, Warsaw, 2013;
Coxeter groups and buildings, Warsaw University 2012 –2013;
Geometric group theory seminar, McGill 2014 –2021.

Lecture courses
Kleinian groups, Wrocław Univerisity 2007.
Geometric Group Theory, Warsaw University 2010.
3-manifolds, Polish Academy of Sciences 2012.
Geometric Group Theory, McGill 2014, 2020.
Honours Algebra 2, McGill 2015-2016.

Honours Applied Linear Algebra, McGill 2015.
Metric Nonpositive Curvature, McGill 2015, 2023.
Honours Differential Geometry, McGill 2016.
Euclidean Geometry, McGill 2016, 2018, 2022, 2023.
Topology and Geometry of 3-Manifolds, McGill 2018.
Algebraic Topology, McGill 2019, 2023.
Linear Algebra and Geometry, McGill 2020.
Groups, Tilings, and Algorithms, McGill 2024.

Other
Conducting workshops at the interdisciplinary scientific camp in Serock, organized by the Polish Children's Fund 2003–2019.
Workshops for Polish Children's Fund in Warsaw 2015-2016.
Presentation at McGill Soup and Science Fall 2014, 2018.
Presentation at Dawson College First Choice Science seminar 2015.
Supervision of Marianopolis College students Elvira Vazquez and Ye En Kim 2019.

List of published journal articles:

1. Damian Osajda and Piotr Przytycki, Tits Alternative for 2-dimensional CAT(0) complexes, accepted to *Forum of Mathematics, Pi* (2022), 21 pages.
2. Sergey Norin, Damian Osajda, and Piotr Przytycki, Torsion groups do not act on 2-dimensional CAT(0) complexes, *Duke Mathematical Journal* 171 no.6 (2022), 1379-1415.
3. Damian Osajda and Piotr Przytycki,Tits Alternative for groups acting properly on 2-dimensional recurrent complexes, with an appendix written jointly with Jon McCammond, *Advances in Mathematics* 391 (2021), paper no. 107976.
4. Piotr Przytycki and Marcin Sabok, Unicorn paths and hyperfiniteness for the mapping class group, *Forum of Mathematics, Sigma* Vol.9:e36 (2021), 1-10.
5. Zachary Munro, Damian Osajda, and Piotr Przytycki, 2-dimensional Coxeter groups are biautomatic, published online in *Proceedings of the Royal Society of Edinburgh Section A: Mathematics* (2021), 16 pages.
6. Alexandre Martin and Piotr Przytycki, Acylindrical actions for two-dimensional Artin groups of hyperbolic type, published online in *International Mathematics Research Notices* (2021), 20 pages.
7. Alexandre Martin and Piotr Przytycki, Abelian subgroups of two-dimensional Artin groups, *Bulletin of the LMS* 53, no.5 (2021), 1338-1350.
8. Piotr Przytycki, Dihedral twists in the Twist Conjecture, published online in *Mathematische Zeitschrift* 299 (2021), 1741-1765.
9. Stephane Lamy and Piotr Przytycki, Presqu'un immeuble pour le groupe des automorphismes moderes, *Annales Henri Lebesgue* 4 (2021), 605-651.
10. Alexandre Martin and Piotr Przytycki, Tits alternative for Artin groups of type FC, *Journal of Group Theory* 23, no.4 (2020) 563-573.
11. Stephane Lamy and Piotr Przytycki, Acylindrical hyperbolicity of the 3-dimensional tame automorphism group, *Annales Scientifiques de l'ENS* (4) 52, no.2 (2019), 367-392.
12. Christopher Smith and Piotr Przytycki, Arcs on spheres intersecting at most twice, *Indiana University Mathematics Journal* 68 no.1 (2019), 157-178.
13. Eduardo-Martinez Pedroza and Piotr Przytycki, Dismantlable classifying space for the family of parabolic subgroups of a relatively hyperbolic group, *Journal of the Institute of Mathematics of Jussieu* 18, no.2 (2019), 329-345.

14. Jingyin Huang and Piotr Przytycki, A step towards Twist Conjecture, *Documenta Mathematica* 23 (2018), 2081-2100.

15. Piotr Przytycki and Daniel T. Wise, Mixed 3-manifolds are virtually special, *Journal of the AMS* 31 (2018), 318-347.

16. Jingyin Huang, Kasia Jankiewicz and Piotr Przytycki, Cocompactly cubulated 2-dimensional Artin groups, *Commentari Mathematici Helvetici* 91 no.3 (2016) 519-542.

17. Piotr Przytycki and Petra Schwer, Systolizing buildings, *Groups, Geometry, and Dynamics* 10 no.1 (2016) 241-277.

18. John Mackay and Piotr Przytycki, Balanced walls for random groups, *Mich Math J.* 64 (2015), 396-419.

19. Piotr Przytycki , Arcs intersecting at most once, *GAFA* 25 (2015), 658-670.

20. Mark Hagen and Piotr Przytycki, Cocompactly cubulated graph manifolds, *Israel Journal of Mathematics* 207 no.1 (2015), 377-394.

21. Sebastian Hensel, Piotr Przytycki, and Richard C.H. Webb, 1-slim triangles and uniform hyperbolicity for arc graphs and curve graphs, *Journal of the EMS* 17 no.4 (2015), 755-762.

22. Piotr Przytycki and Daniel T. Wise, Separability of embedded surfaces in 3-manifolds, *Compositio Mathematica* 150 (2014), 1623-1630.

23. Sebastian Hensel, Damian Osajda, and Piotr Przytycki, Realisation and dismantlability, *Geometry & Topology* 18 (2014), 2079-2126.

24. Piotr Przytycki and Daniel T. Wise, Graph manifolds with boundary are virtually special, *Journal of Topology* 7 no.2 (2014), 419-435.

25. Tomasz Elsner and Piotr Przytycki, Square complexes and simplicial nonpositive curvature, *Proceedings of the AMS* 141 (2013), 2997-3004.

26. Piotr Przytycki and Jennifer Schultens, Contractibility of the Kakimizu complex and symmetric Seifert surfaces, *Transactions of the AMS* 364 no.3 (2012), 1489-1508.

27. Pierre-Emmanuel Caprace and Piotr Przytycki, Bipolar Coxeter groups, *Journal of Algebra* 338 no.1 (2011), 35-55.

28. Pierre-Emmanuel Caprace and Piotr Przytycki, Twist-rigid Coxeter groups, *Geometry & Topology* 14 (2010) 2243-2275.

29. Sebastian Hensel and Piotr Przytycki, The ending lamination space of the five-punctured sphere is the Noebeling curve, *Journal of the LMS* 84 no.1 (2011), 103-119.

30. Eryk Kopczyński, Igor Pak, and Piotr Przytycki, Acute triangulations of polyhedra and R^n, *Combinatorica* 32 no.1 (2012) 85-110.

31. Piotr Przytycki, Gabriela Schmithuesen and Ferran Valdez , Veech groups of Loch Ness monsters, *Annales de l'Institut Fourier* 61 no.2 (2011), 673-687.

32. Francois Dahmani,Vincent Guirardel and Piotr Przytycki, Random groups do not split, *Mathematische Annalen* 349 no.3 (2011), 657-673.

33. Damian Osajda and Piotr Przytycki, Boundaries of systolic groups, *Geometry & Topology* 13 (2009), 2807-2880.

34. Piotr Przytycki, EG for systolic groups, *Commentarii Mathematici Helvetici* 84 no.1 (2009), 159-169.

35. Piotr Przytycki and Jacek Swiątkowski, Flag-no-square triangulations and Gromov boundaries in dimension 3, *Groups, Geometry, and Dynamics* 3 (2009), 453-468.

36. Piotr Przytycki, The fixed point theorem for simplicial nonpositive curvature, *Mathematical Proceedings of Cambridge Philosophical Society* 144 (2008), 683-695.

37. Piotr Przytycki and Maciej P. Wojtkowski, Gaussian thermostats as geodesic flows of nonsymmetric linear connections, *Communications in Mathematical Physics* 277 no.3 (2008), 759-769.

38. Piotr Przytycki, Systolic groups with no flats are hyperbolic, *Fundamenta Mathematicae* 193 (2007), 277-283.

Article in conference proceedings:

1. Piotr Przytycki and Alessandro Sisto , A note on acylindrical hyperbolicity of Mapping Class Groups, *Advanced Studies in Pure Mathematics* 73, *Hyperbolic Geometry and Geometric Group Theory* (2017), 255-264.

Submitted journal articles:

1. Damian Osajda and Piotr Przytycki, Coxeter groups are biautomatic, submitted (2022), 20 pages.
2. Stephane Lamy and Piotr Przytycki, Tits Alternative for the 3-dimensional tame automorphism group, submitted (2022), 64 pages.
3. A pair of Garside shadows, joint with Yeeka Yau, submitted (2023), 7 pages.
4. Finitely generated subgroups of algebraic elements of plane Cremona groups are bounded, joint with Anne Lonjou and Christian Urech, submitted (2023), 15 pages.
5. Weak Tits alternative for uniform lattices in buildings, joint with Chris Karpinski and Damian Osajda, submitted (2023), 15 pages..

Preprint:
The moduli space of cactus flower curves and the virtual cactus group, joint with Aleksei Ilin, Joel Kamnitzer, Yu Li, and Leonid Rybnikov (2023), 69 pages.