

Maxime Fortier Bourque

Département de mathématiques et de statistique	Date of birth	August 10, 1987
Université de Montréal	Citizenship	Canada
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Education

2015	Ph.D. in Mathematics (Advisor: Jeremy Kahn)	The Graduate Center of the City University of New York
2010	M.Sc. in Mathematics	Université Laval
2009	B.Sc. in Mathematics	Université Laval

Employment

2021–	Assistant professor	Université de Montréal
2018–2021	Lecturer in Pure Mathematics	University of Glasgow
2015–2018	Coxeter Assistant Professor	University of Toronto Mississauga (UTM)

Honors and awards

2021	New Investigator Award (249,020 GBP) <i>terminated early due to relocation</i>	EPSRC
2017–2018	Discovery Grant (70,000 CAD) <i>terminated early due to relocation</i>	NSERC
2015–2017	Postdoctoral Fellowship	FRQNT
2010–2013	Postgraduate Scholarship	NSERC
2010	Masters Research Scholarship	FRQNT
2009–2010	Alexander Graham Bell Canada Graduate Scholarship	NSERC
2008	Math in Moscow Scholarship	NSERC and CMS
2007, 2008	Undergraduate Student Research Award	NSERC

Papers and preprints

14. *The Klein quartic maximizes the multiplicity of the first positive eigenvalue of the Laplacian* (with Bram Petri), submitted (2021).
arXiv:2111.14699
13. *The extremal length systole of the Bolza surface* (with Dídac Martínez-Granado and Franco Vargas Pallete), submitted (2021).
arXiv:2105.03871
12. *A divergent horocycle in the horofunction compactification of the Teichmüller metric*, submitted (2019).
arXiv:1911.10365
11. *Kissing numbers of regular graphs* (with Bram Petri), to appear in **Combinatorica**.
arXiv:1909.12817
10. *Kissing numbers of closed hyperbolic manifolds* (with Bram Petri), to appear in the **American Journal of Mathematics**.
arXiv:1905.11083
9. *Hyperbolic surfaces with sublinearly many systoles that fill*, **Comment. Math. Helv.** 95 (2020), 515–534.
8. *Local maxima of the systole function* (with Kasra Rafi), to appear in the **J. Eur. Math. Soc (JEMS)** 24 (2022), 623–668.
7. *Toy Teichmüller spaces of real dimension 2: the pentagon and the punctured triangle* (with Yudong Chen, Roman Chernov, Marco Flores, Seewoo Lee, and Bowen Yang), **Geom. Dedicata** 197 (2018), 193–227.
6. *Non-convex balls in the Teichmüller metric* (with Kasra Rafi), **J. Differential Geom.** 110 (2018), 379–412.
5. *The holomorphic couch theorem*, **Invent. Math.** 212 (2018), 319–406.
4. *The converse of the Schwarz Lemma is false*, **Ann. Acad. Sci. Fenn. Math.** 41 (2016), 235–241.
3. *Conformal grafting and convergence of Fenchel-Nielsen twist coordinates*, **Conform. Geom. Dyn.** 19 (2015), 1–18.
2. *Rational Ahlfors functions* (with Malik Younsi), **Constr. Approx.** 41 (2015), 157–183.
1. *Super-identical pseudospectra* (with Thomas Ransford), **J. London Math. Soc.** 88 (2009), 511–528.

Presentations

Conference talks

Oct 2021	Geometry and Topology of (Almost) Complex Structures	Online
May 2021	AMS Sectional Meeting	San Francisco State University
Sep 2020	Scottish Topology Seminar	University of Aberdeen
Jun 2019	Workshop on Geometry: Multiple Perspectives on Geometric Inequalities	CRM, Barcelona
Oct 2018	Groups and Geometry in the South East	University College, London
Aug 2018	Workshop on Geometry of Teichmüller Space	Fields Institute
May 2018	Complex Analysis and Spectral Theory	Université Laval
Aug 2017	13th William Rowan Hamilton Geometry and Topology Workshop	Trinity College Dublin
Apr 2017	AMS Sectional Meeting	Indiana University
Dec 2016	2016 CMS Winter Meeting	Niagara Falls
Apr 2016	14th annual Graduate Student Topology and Geometry Conference	Indiana University
Dec 2015	2015 CMS Winter Meeting	Montreal
Oct 2014	Ahlfors-Bers Colloquium VI	Yale University

Recent seminar talks

Feb 2022	Spectral Geometry In The Clouds	Online
Nov 2021	CRM-Montréal-Québec Analysis Seminar	Online
Mar 2021	Dynamics, Geometry and Groups Seminar	Queens University
Jul 2020	Hyperbolic Lunch	University of Toronto
May 2020	Séminaire de Géométrie et Dynamique	Orsay
Jan 2019	Differential Geometry & Topology seminar	University of Cambridge

Public lectures

Dec 2021	Club Math	Université de Montréal
Nov 2020	Café scientifique français d'Écosse	Online
Sep/Oct 2019	Open Days	University of Glasgow

Teaching experience

Fall 2021	Measure and integration	Université de Montréal
2019–2021	Further Complex Analysis	University of Glasgow
Fall 2020	Writing and Presenting Mathematics	University of Glasgow
2019–2020	Analysis of Differentiation and Integration	University of Glasgow
Fall 2017	Topics in geometry: Hyperbolic surfaces	University of Toronto
2017, 2018	Classical Geometries	UTM
2014–2016	Calculus	Brooklyn College and UTM

Mentoring

2019–	Co-supervision of PhD student Aitor Azemar, University of Glasgow
Summer 2021	Supervision of LMS Undergraduate Research Bursary Samuel Horsch, University of Glasgow
2020–2021	Supervision of MSci student Joseph Connon, University of Glasgow
2020–2021	Supervision of Level 4 projects by Holly Gregory and Jinghan Qiu, University of Glasgow
2019–2020	Supervision of Level 4 projects by Nina Fischer, Esperanza Garijo, Ernestas Lingvignas, and Juan Diaz Rios, University of Glasgow
Summer 2018	Supervision of Eric Ramalheiro who received an Undergraduate Student Research Award from NSERC, University of Toronto Mississauga
Summer 2016	Supervision of 6 international students during a Fields Undergraduate Summer Research Project, Fields Institute

Service

2022–	Editor for Conformal Geometry and Dynamics
2021–	Co-organiser of the CRM/Montréal/Québec Analysis seminar
2020–2021	Co-organiser of a special session on “Groups, Geometry, and Topology” at the 2021 Spring Southeastern Sectional Meeting of the AMS
2020–2021	Organiser of Glasgow’s Distinguished Lecture Series
2020–2021	Co-organiser of Glasgow’s Geometry and Topology seminar
2016–2017	Co-organiser of a weekly “Hyperbolic Lunch” with informal talks from students, postdocs, and faculty, University of Toronto
2016	Co-organiser of a session on “Complex analysis and applications” at the 2016 CMS Winter Meeting, Niagara Falls, Canada