Frédéric Latrémolière, Ph.D.

Department of Mathematics
University of Denver
Denver CO 80208, USA
frederic@math.du.edu
www.math.du.edu/∼frederic

Academic Vitae

2004 *Ph.D. in Mathematics*
University of California, Berkeley
Advisor: Marc A. Rieffel; *Topic:* Noncommutative Metric Geometry.

2000 *Candidate in Mathematics*
University of California, Berkeley

1999 *Master in Arts in Statistics*
University of California, Berkeley

1998 *Statisticien-Economiste / Ingénieur Statisticien*
Ecole Nationale de la Statistique et de l'Administration Economique, Paris

1997 *Maitrise de Mathématiques et Applications Fondamentales mention bien*
Université Pierre et Marie Curie, Paris VI

Professional Vitae

Since Fall 2016 *Full Professor of Mathematics* with tenure, University of Denver

Fall 2013 *Ulam Visiting Professor*, University of Colorado, Boulder

2012–2016 *Associate Professor of Mathematics* with tenure, University of Denver

2007–2012 *Assistant Professor of Mathematics*, University of Denver

2006–2007 *Visiting assistant professor of Mathematics*, University of Cincinnati

2004–2006 *Postdoctoral Fellow in Mathematics*, University of Toronto

Full List of Publications

39. *A Gromov-Hausdorff distance for Spectral Triples*
F. Latrémolière, 28 pages, submitted (2018), ArXiv: 1811.10843.

38. *The Dual-Modular Gromov-Hausdorff Propinquity and Completeness*
F. Latrémolière, 36 pages, submitted (2018), ArXiv: 1811.04534.

37. *A survey of the preservation of symmetries by the dual Gromov-Hausdorff propinquity*
F. Latrémolière, C. R. Math. Rep. Acad. Sci. Canada Vol. **40** (3) 2018, pp. 6590.

36. *Convergence of Cauchy sequences for the Covariant Gromov-Hausdorff propinquity*
F. Latrémolière, Journal of Mathematical Analysis and Applications **24**a (2018) pp. 378–404, ArXiv: 1806.04721.

35. *The Covariant Gromov-Hausdorff propinquity*
F. Latrémolière, 31 pages, Accepted in Studia Mathematica (2018), ArXiv: 1805.11229.

34. *Convergence of the Heisenberg modules over quantum two-tori for the modular Gromov-Hausdorff propinquity*
F. Latrémolière, 34 pages, submitted (2018), ArXiv: 1803.06601.

33. *Semigroupoid, Groupoid and Group Actions on Limits for the Gromov-Hausdorff Propinquity*
F. Latrémolière, 42 pages, submitted (2017), ArXiv: 1708.01973.

32. *Some applications of conditional expectations to convergence for the quantum Gromov-Hausdorff propinquity*
K. Aguilar, F. Latrémolière, 12 pages, Accepted in Banach Center Publications (2017), ArXiv: 1708.00595.

31. *Heisenberg modules over quantum* 2*-tori are metrized quantum vector bundles*
F. Latrémolière, 38 pages, submitted (2017), ArXiv: 1703.07073.

30. *The modular Gromov-Hausdorff propinquity*
F. Latrémolière, 67 pages, submitted (2016), ArXiv: 1608.04881.

29. *Equivalence of Quantum Metrics with common domains*
F. Latrémolière, Journal of Mathematical Analysis and Application **443** (2016), pp. 1179–1195, ArXiv: 1604.00755.

28. *Noncommutative Solenoids and the Gromov-Hausdorff propinquity*
F. Latrémolière, J. Packer, Proc. Amer. Math. Soc. **145** (2017) 5, pp. 2043–2057, ArXiv: 1601.02707.

27. *Quantum Ultrametrics on AF algebras and the Gromov-Hausdorff propinquity*
K. Aguilar, F. Latrémolière, Studia Mathematica **231** (2015) 2, pp. 149–193, ArXiv: 1511.07114.

26. *Curved Noncommutative Tori as Leibniz Quantum Compact Metric Spaces*
F. Latrémolière, Journal of Mathematical Physics **56** (2015) 12, 123503, 16 pp., ArXiv: 1507.08771.

25. *Quantum Metric Spaces and the Gromov-Hausdorff Propinquity*
F. Latrémolière, *Noncommutative Geometry and optimal transport*, pp. 47–133, Contemp. Math. **676**, Amer. Math. Soc., ArXiv: 1506.04341 .

24. *A Compactness Theorem for The Dual Gromov-Hausdorff Propinquity*
F. Latrémolière, Indiana University Mathematics Journal **66** (2017) 5, pp. 1707–1753, ArXiv: 1501.06121.

23. *Topographic Gromov-Hausdorff Quantum Hypertopology for Proper Quantum Metric Spaces*
F. Latrémolière, 67 pages, Submitted, (2014), ArXiv: 1406.0233.

22. *Explicit Construction of Equivalence Bimodules between noncommutative Solenoids*
F. Latrémolière, J. Packer, *Trends in harmonic analysis and its applications*, 111–140, Contemp. Math., **650**, Amer. Math. Soc., ArXiv: 1410.0808.

21. *The Triangle Inequality and The Dual Gromov-Hausdorff Propinquity*
F. Latrémolière, Indiana Univ. Math. J. **66** (2017) 1, pp. 297–313, ArXiv: 1404.6330.

20. *Convergence of Fuzzy Tori to Quantum Tori for the quantum Gromov-Hausdorff propinquity: an explicit approach*
F. Latrémolière, Münster Journal of Mathematics **8** (2015), pp. 57–98, ArXiv: 1312.0069.

19. *Noncommutative solenoids and their projective modules*
F. Latrémolière, J. Packer, 19 pages, to appear in *Commutative and Noncommutative Harmonic Analysis and Applications*, AMS Contemp. Math. (2013), ArXiv: 1311.1193.

18. *The Dual Gromov-Hausdorff Propinquity*
F. Latrémolière, Journal de Mathématiques Pures et Appliquées, **103** (2015) 2, pp. 303–351, ArXiv: 1311.0104.

17. *The Quantum Gromov-Hausdorff Propinquity*
F. Latrémolière, Transactions of the American Math. Society **368** (2016) 1, pp. 365–411, published online on May 22, 2015, `http://dx.doi.org/10.1090/tran/6334`; ArXiv: 1302.4058.

16. *Quantum Locally Compact Metric Spaces*
F. Latrémolière, Journal of Functional Analysis, **264** (2013) 1, pp. 362–402, ArXiv: 1208.2398.

15. *Classification of Noncommutative Domain Algebras*
A. Arias, F. Latrémolière, C. R. Acad. Sci. Paris, Ser. I, **350** (2012), pp. 609–611, ArXiv: 1203.5548.

14. *Noncommutative Solenoids*
F. Latrémolière, J. Packer, 26 pages, New York Journal of Mathematics **24**a (2018), pp. 155–191, ArXiv: 1110.6227.

13. *Symmetry in the Cuntz Algebra on two generators*
M.-D. Choi, F. Latrémolière, Journal of Mathematical Analysis and Application **387** (2012), pp. 1050–1060, ArXiv: 1010.5842.

12. *Isomorphisms of Noncommutative Domain Algebras II*
A. Arias, F. Latrémolière, Journal of Operator Theory **70** (2013) 1, pp. 273–290, ArXiv: 1010.5838.

11. *Ergodic Actions of Convergent Fuchsian groups on noncommutative Hardy Algebras*
A.Arias, F. Latrémolière, Proceedings on the AMS **139** (2011) 7, pp. 2485–2496, ArXiv: 1010.5840.

10. *C^*-algebraic characterization of orbit injection equivalence for minimal free Cantor systems*
F. Latrémolière, N. Ormes, Rocky Mountain Journal of Mathematics **42** (2012) 1, pp. 157–200, ArXiv: 0903.1881.

9. *Isomorphisms of Noncommutative Domain Algebras*
A. Arias, F. Latrémolière, Journal of Operator Theory **66** (2011) 2, pp. 425–450, Arxiv: 09020195.

8. *Boolean inner-product spaces and Boolean matrices*
S. Gudder, F. Latrémolière, Linear Algebra and Applications **431** (2009) 1-2, 272-296, ArXiv: 0902.1290.

7. *Characterization of the Sequential Product on Quantum Effects*
S. Gudder, F. Latrémolière, Journal of Mathematical Physics **49** (2008) 5, 7 pages, ArXiv: 0803.3867.

6. *Irreducible Representations of C^*-crossed-products by finite groups*
A. Arias, F. Latrémolière, Journal of the Ramanujan Mathematical Society **25** (2010) 2 pp. 193–231, Arxiv: 0803.3865.

5. *The C*-algebra of symmetric words in two universal unitaries*
   M.-D. Choi, F. Latrémolière, Journal of Operator Theory **62** (2009) 1, pp. 159–169, ArXiv: math/0610467.

4. *C*-Crossed-Products by an order-two automorphism*
   M.-D. Choi, F. Latrémolière, Canadian Bulletin of Mathematics **53** (2010) 1, pp. 37–50, ArXiv: math/0610468.

3. *Crossed-products by conformal automorphisms of the closed disk*
   M.-D. Choi, F. Latrémolière, Houston Journal of Mathematics **36** (2010) 2, pp. 751–779, ArXiv: math/0511331.

2. *Bounded-Lipschitz distances on the state space of a C*-algebra*
   F. Latrémolière, Taiwanese Journal of Mathematics **11** (2007) 2, pp. 447–469, ArXiv: math/0510340.

1. *Approximation of the quantum tori by finite quantum tori for the quantum Gromov-Hausdorff distance*
   F. Latrémolière, Journal of Functional Analysis **223** (2005), pp. 365–395, ArXiv: math/0310214.

Conferences Presentations

I have been a speaker at:

2018 *Kyoto Operator Algebra Seminar*, RIMS, University of Kytoto, sponsored speaker.

2018 *Functional Analysis seminar*, Arizona State University, invited speaker.

2018 *Special Quantum Metric Geometry seminar*, University of California at Berkeley, invited speaker.

2018 *Mathematical Physics and Dynamical Systems Seminar*, University of California, Riverside, invited speaker.

2018 *New Geometry conference*, Mathematics Institute of the Polish Academy of Science, plenary speaker

2017 *Special Session, Operator Algebras*, AMS Southeastern Sectional meeting, Orlando, invited speaker.

2017 *Noncommutative Geometry Seminar*, Caltech, invited speaker

2017 *Fractal Geometry Seminar*, University of California, Riverside, invited speaker.

2017 *Mathematical Physics and Dynamical Systems Seminar*, University of California, Riverside, invited speaker.

2017 *Functional Analysis Seminar*, Dartmouth College, Shapiro visitor.

2016 *Noncommutative Geometry Seminar*, Caltech, invited speaker,

2015 *Noncommutative Geometry and Spectral Invariants*, Université du Québec at Montréal, Invited speaker,

2015 *Analysis Seminar*, University of Colorado, Boulder,

2014 *Journée transport optimal*, Noncommutative Network conference, Invited speaker, Besançon, France.

2014 *East Coast Operator Algebra Seminar*, Invited speaker, Fields Institute, Ontario, Canada

2013 *Great Plain Operator Theory Symposium*, contributed talk, University of California, Berkeley

2013 *AMS Spring Western section Meeting*, invited speaker, University of Colorado, Boulder

2013 *Colloquium*, invited speaker, University of Wyoming

2012 *West Coast Operator Seminar*, Plenary speaker, University of Oregon.

2012 *GPOTS*, contributed talk, University of Houston

2011 *AMS Fall Central Section Meeting*, invited speaker, University of Nebraska, Lincoln special session "Recent progress in Operator Algebras"

2011 *CMS Summer meeting*, invited speaker, University of Alberta, Edmonton session "Operator Algebras"

2010 *GPOTS Workshop*, invited speaker, University of Colorado, Boulder

2006 *Colloquium*, invited speaker, Kansas State University

2006 *AMS Fall Central Section Meeting*, invited speaker, University of Cincinnati special session "Operator Algebras"

2006 *GPOTS*, contributed talk, University of Iowa

2004 *AMS Spring Eastern Section Meeting*, invited speaker, special session "Metric Geometry"

2004 *Colloquium*, invited speaker, University of Nevada, Reno

2003 *West Coast Operator Algebra Seminar*, plenary speaker, BIRS, Banff

Teaching

Average Evaluations: 5.36/6 at the University of Denver, weighted by class size at the time of evaluation.

Junior, Senior and Graduate Level

Functional Analysis, Measure Theory, Topology, Introduction to Real Analysis, Real Analysis II, Spectral Theory and C*-algebras, Complex Analysis, Advanced Linear Algebra.

Freshman and Sophomore Level

Calculus 1, Calculus 2, Calculus 3, Honors Calculus 2, Honors Calculus 3, Mathematical Probability, Elements of Linear algebra.

General Audience Level

First year seminar, Mathematics Foundation / Analytical Inquiry 1.

Grants

External

EU RISE Grant Node coordinator (P.I. : Piotr Hajac).

NSF Grant P.I. for NSF Grant DMS 0852495: joint grant with the University of Colorado, Boulder for the organization of GPOTS 2009 and 2010 (7/1/2009–3/31/2014)

NSF Grant P.I. for NSF Grant DMS 1445373 to organize the West Coast Operator Algebra Seminar in 2014 (8/15/2014–7/31/2015)

Internal

PROF Grant Co-PI for a grant from the University of Denver (PROF Grant) for high performance computing on the CUDA architecture. (completed)

PROF Grant P.I. for internal grant ($ 20000) as seed money for my research in quantum metric geometry. (7/1/2013–6/30/2017)

Service

Professional

- Organizer of a special session, AMS Fall Western Sectional Meeting at the State Universiy at San Francisco, 2018.
- Organizer of a special session, AMS Fall Western Sectional Meeting at the University of Denver, 2016.
- Organizer for **West Coast Operator Algebra 2014** at the University of Denver (NSF Supported)
- Lead organizer for **Great Plain Operator Theory Symposium 2010** at the University of Denver (NSF supported)
- Reviewer for many mathematics journals, including *Advances in Mathematics*, *Journal of Functional Analysis*, *Journal of Mathematical Analysis and Applications*, *Journal of Operator Theory*, *Integral Equations and Operator Theory*, *Memoirs of the American Mathematical Society*, *European Journal of Noncommutative Geometry*, *Expositiones Math.*, *SIGMA*, *Collectenae math*, *Results in math*, *Science China*.

Academic

- Postdoctoral Mentor for *Zhe Liu* (Ph.D. 2010, New Hampshire), 2012–2013.
- Ph.D. thesis advisor of *Konrad Aguilar* (PhD in 2017, now postdoctoral research scholar at ASU)
- Member of the Ph.D. dissertation committee for 5 students at DU, 3 students at CU Boulder, and 1 student at U. of Wollongong.
- Academic advisor for first year undergraduate students in 2008–2009, 2009–2010, and every year since 2011, in groups of fifteen to eighteen per year, as part of the FSEM program at the University of Denver.
- Major advisor in Mathematics since 2008 (more than ten students per year)
- Graduate advisor for incoming graduate students at the rate of one to two a year.

University Committees

2012–2015 Faculty Senate Representative, Faculty Senate, University of Denver. Elected as representative for the Department of Mathematics (3 years term). Member of the Finance Committee.

Division Committees

2008–2014 Chair of the IT Committee for the division of Natural Sciences and Mathematics (NSM).

2007–2014 Representative of the Department of Mathematics at the IT Committee for NSM.

2008-2010 Member of the NSM/University Technology Services university committee.

Departmental Committees

2012–2016 Undergraduate Coordinator and Undergraduate Committee chair

2010-2013 Analysis Ph.D. preliminary Examination Committee chair

2008-2011 Graduate Studies committee

2009,2010,2012 Member of several hiring committees for tenure-track positions in Mathematics.

2012, 2014, 2015 Member of postdoc hiring committees.

Computer Skills

Systems Linux (Debian), Unix (BSD, AIX), Windows.

Languages C,C++,Java,Javascript,Common Lisp,Scheme,Forth,Pascal,Fortran,Prolog, x86 assembler, rudiments of Haskell.

Web HTML, Javascript DOM, XML, XSLT, CSS, PHP, CGI programming in C/C++

Software SAS Analytics, Latex, Emacs, Eclipse, Netbeans, Mathematica, Libre Office (including Java/UNO interface), MsOffice.

Other GPU programming: CUDA, OpenGL 3.x, 4.x

Languages

French Native.

English Fluent.

German Reading and writing knowledge.

Latin Foundation.