

Duncan Dauvergne

CONTACT INFORMATION	Department of Mathematics Princeton University Fine Hall, Washington Road Princeton, NJ 08544 USA dd18@math.princeton.edu
EDUCATION	University of Toronto , Toronto, ON Canada Ph.D., Mathematics 2015-2019 Thesis: Random sorting networks, the directed landscape, and random polynomials Supervisor: Bálint Virág M.Sc., Mathematics 2014-2015 Research Topic: D -spaces and the Lindelöf- D problem Supervisor: William Weiss University of British Columbia , Vancouver, BC Canada B.Sc., Honours Mathematics 2010-2014
EMPLOYMENT	Instructor and NSERC Postdoctoral Fellow, Princeton University 09/2019-present
RESEARCH INTERESTS	Probability, combinatorial probability, last passage percolation, KPZ universality, interacting particle systems, sorting networks, random polynomials, potential theory, random constraint satisfaction
PUBLICATIONS	<ol style="list-style-type: none">Dauvergne, D. and Virág, B. (2018). Basic properties of the Airy line ensemble. https://arxiv.org/abs/1812.00311. <i>To appear in the Annals of Probability</i>.Dauvergne, D. and Virág, B. (2019). Circular support in random sorting networks. <i>Transactions of the American Mathematical Society</i>, 373 (2020), 1529-1553.Bloom, T. and Dauvergne D. (2019). Asymptotic zero distribution of random orthogonal polynomials. <i>The Annals of Probability</i>, 47(5), 3202-3230.Angel, O., Dauvergne, D., Holroyd, A.E., and Virág, B. (2019). The local limit of random sorting networks, <i>Annales de l'Institut Henri Poincaré, Probabilités et Statistiques</i>, 55(1), 412-440.Dauvergne, D. (2016). Not every transitively D-space is D. <i>Topology and its Applications</i>, 209, 115-119.Dauvergne, D. and Edelstein-Keshet, L. (2015). Application of quasi-steady state methods to molecular motor transport on microtubules in fungal hyphae. <i>Journal of Theoretical Biology</i>, 379, 47-58.
ELECTRONIC PREPRINTS	<ol style="list-style-type: none">Dauvergne, D, Sarkar, S., and Virág, B. (2020). Three-halves variation of geodesics in the directed landscape. https://arxiv.org/pdf/2010.12994. <i>Submitted</i>.Dauvergne, D. (2020). Hidden invariance of last passage percolation and directed polymers. https://arxiv.org/abs/2002.09459. <i>Submitted</i>.Dauvergne, D., Nica, M., and Virág, B. (2019). Uniform convergence to the Airy line ensemble. https://arxiv.org/abs/1907.10160. <i>Submitted</i>.

4. Dauvergne, D. (2019). A necessary and sufficient condition for global convergence of the zeros of random polynomials. <https://arxiv.org/abs/1901.07614>. *Submitted*.
5. Dauvergne, D., Ortmann, J. and Virág, B. (2018). The directed landscape. <https://arxiv.org/abs/1812.00309>. *Submitted*.
6. Dauvergne, D. (2018). The Archimedean limit of random sorting networks. <https://arxiv.org/abs/1802.08934>. *Submitted*.

TALKS GIVEN

Invited talks:

- *Hidden invariance of last passage percolation* (Online) Nov 2020
Probability Seminar, UC Berkeley, Berkeley, CA
- *The Archimedean limit of random sorting networks* (Online) Oct 2020
Geometric and Functional Analysis Seminar, University of Helsinki, Helsinki Finland
- *The scaling limit of the longest increasing subsequence* (Online) Sep 2020
'Permutations in Probability' workshop, BIRS, Banff, AB
- *The Airy sheet* (Online) Jun 2020
Open Online Probability School, University of British Columbia, Vancouver, BC
- *The directed landscape* Jan 2020
Probability Seminar, University of Virginia, Charlottesville, VA
- *The directed landscape* Oct 2019
CRM-ISM Probability Seminar, McGill University, Montreal, QC
- *The directed landscape* Oct 2019
AMS Fall Eastern Sectional Meeting, Binghamton University, Binghamton, NY
- *The directed landscape* Sep 2019
AMS Fall Central Sectional Meeting, UW Madison, Madison, WI
- *Zeros of random polynomials* Aug 2019
'Zeros of random polynomials' workshop, AIM, San Jose, CA
- *The directed landscape* May 2019
Probability Theory Seminar, UW Madison, Madison, WI
- *The directed landscape* Apr 2019
Probability Seminar, University of Utah, Salt Lake City, UT
- *The Archimedean limit of random sorting networks* Mar 2019
'Asymptotic Algebraic Combinatorics' workshop, BIRS, Banff, AB
- *The directed landscape* Feb 2019
Penn-Temple Probability Seminar, University of Michigan, Ann Arbor, MI
- *Asymptotic zero distribution of random polynomials* Feb 2019
Penn-Temple Probability Seminar, University of Pennsylvania, Philadelphia, PA
- *The Archimedean Limit of Random Sorting Networks* Nov 2018
Probability Seminar, New York University, New York, NY
- *The Archimedean limit of random sorting networks* Oct 2018
Probability Seminar, Indiana University, Bloomington, IN
- *Asymptotic zero distribution of random polynomials* Oct 2018
Midwestern Workshop on Asymptotic Analysis, Indiana University, Bloomington, IN
- *The Archimedean limit of random sorting networks* Sep 2018
Departmental Colloquium, University of Toronto, Toronto, ON
- *The Archimedean Limit of Random Sorting Networks* May 2018
Probability Seminar, Cornell University, Ithaca, NY
- *The Global Limit of Random Sorting Networks* Feb 2018
Probability Seminar, University of British Columbia, BC
- *The Global Limit of Random Sorting Networks* Oct 2017
Combinatorics Seminar, Massachusetts Institute of Technology, Cambridge, MA

- *The Local Limit of Random Sorting Networks* Apr 2017
Probability Theory Seminar, UW Madison, Madison, WI

Seminar talks:

- *Hidden invariance of last passage percolation and directed polymers* Oct 2020
Princeton Probability Seminar (Online), Princeton University, Princeton, NJ
- *The directed landscape* Sep 2019
Princeton Probability Seminar, Princeton University, Princeton, NJ
- *Universality for zeros of random polynomials* Jan 2018
Probability Theory Seminar, University of Toronto, Toronto, ON
- *The Global Limit of Random Sorting Networks* Nov 2017
Probability Theory Seminar, Alfred Rényi Institute, Budapest, Hungary
- *Local Properties of Random Sorting Networks* Mar 2017
Probability Theory Seminar, University of Toronto, Toronto, ON
- *Energy in permuton processes* Nov 2016
Probability Theory Seminar, Alfred Rényi Institute, Budapest, Hungary

Other contributed talks:

- *Hidden invariance of last passage percolation and directed polymers* May 2020
Junior Integrable Probability Seminar, Online
- *Random sorting networks.* Dec 2018
Graduate Student Seminar, University of Toronto, Toronto, ON

TEACHING
EXPERIENCE

- **Course Instructor, Princeton University**
 - MAT 104 - Calculus II (Course coordinator) Fall 2020
 - MAT 202 - Linear Algebra and Applications Spring 2020
 - MAT 202 - Linear Algebra and Applications Fall 2019
- **Course Instructor and Coordinator, University of Toronto St. George**
 - MAT 137 - Calculus! (Course coordinator) Summer 2018
 - MAT 223 -Linear Algebra I Winter 2018
- **Teaching Assistant, University of Toronto St. George** 2014-2018
 - MAT 1601 (Graduate Probability II) Winter 2019
 - MAT 1600 (Graduate Probability I) Fall 2018
 - MAT 292 (Introductory ODEs) Fall 2017
 - MAT 224 (Linear Algebra II) Summer 2017
 - MAT 337 (Analysis), MAT475 (Problem Solving Seminar) Winter 2017
 - MAT 344 (Combinatorics) Fall 2016
 - MAT 237 (Multivariable Calculus) Summer 2016
 - MAT 334 (Complex Variables), MAT 223 (Linear Algebra I) Winter 2016
 - MAT 309 (Mathematical Logic) Fall 2015
 - MAT 235 (Multivariable Calculus) Summer 2015
 - MAT 136 (Calculus II) Winter 2015
 - MAT 135 (Calculus I) Fall 2014
- **Teaching Assistant, University of Toronto Scarborough** Summer 2015
 - MAT A36 (Integral Calculus)

- **Teaching Assistant, University of British Columbia** 2012-2013
- MAT 217 (Introductory ODEs) Summer 2013
- MAT 200 (Multivariable Calculus) Summer 2012

UNDERGRADUATE SUPERVISION Vydhourie Thiyageswaran (Undergraduate senior thesis student, 2020-2021), George Bentley (Undergraduate summer research program, Summer 2020)

AWARDS

- Princeton University Department of Mathematics Teaching Award 2020
- Canadian Mathematical Society Doctoral Prize 2020
- University of Toronto Malcolm Slingsby Robertson Prize 2019
- NSERC Postdoctoral Fellowship (\$90,000/ 2 yrs) 2019
- NSERC Canada Graduate Scholarship (\$105,000/ 3 yrs) 2016
- University of Toronto J.R.G. Smyth Mathematics Scholarship (\$4,294/ 1 yr) 2015
- University of Toronto Alumni and Friends Graduate Scholarship (\$7000/ 1 yr) 2015
- University of Toronto Graduate Scholarship, Ph.D. (\$21,655/ 1 yr) 2015
- University of Toronto Graduate Scholarship, M.Sc. (\$25,949/ 1 yr) 2014
- NSERC Undergraduate Student Research Award (USRA) (\$5,740/ 4 mths) 2014
- UBC Reginald Palliser Wilson Scholarship (\$1000/ 1yr) 2013
- UBC Charles and Jane Banks Scholarship (\$500/ 1 yr) 2013
- UBC Trek Excellence Scholarship (\$4500/ 3 yrs) 2011, 2012, 2013
- UBC Provost's Entrance Scholarship (\$15,000/ 2 yrs) 2010
- UBC President's Entrance Scholarship (\$2500/ 1 yr) 2010