

Institut für Mathematik, Universität Zürich
Winterthurerstrasse 190, 8057 Zürich, Switzerland

☎ (+41) 78 889 70 32

☎ (+41) 44 635 60 57

FAX (+41) 44 635 57 05

✉ jehanne.dousse@math.uzh.ch

🌐 <http://user.math.uzh.ch/dousse>

Jehanne Dousse

Curriculum Vitae

Education

- 2012–2015 **Ph.D.**, *Université Paris Diderot, France*, Advisor: Jeremy Lovejoy.
Title: *Integer partitions: Rogers-Ramanujan type identities and asymptotics*
- 2012–2013 **Master in Mathematics**, *Université Pierre et Marie Curie - Paris 6, France*.
- 2010–2012 **Master in Theoretical Computer Science**, *École Normale Supérieure de Lyon and Université Paris Diderot, France*.
- 2009–2010 **B.Sc. (Licence)**, *École Normale Supérieure de Lyon, France*.
Major: theoretical computer science, minor: mathematics
- 2007–2009 **Preparatory classes to the competitive entrance examination to the french Grandes Écoles (Mathematics, Physics and Computer Science)**, *Lycée Henri IV, Paris, France*.

Employment

- 2015–present **Postdoctoral fellow**, *Institut für Mathematik, Universität Zürich, Switzerland*.

Research interests

Combinatorics and Number Theory

- Integer partitions and q -series
- Asymptotics
- Modular forms
- Additive combinatorics
- Statistical physics

Grants

- 2016 Forschungskredit (research credit), Universität Zürich, 86911 CHF.
Project title: “Integer partitions: at the interface between combinatorics and number theory”
- 2014–2015 Member of the French-Korean STAR project “Partial theta functions in Ramanujan’s lost notebook and beyond”, 10880 Euros.

Publications in international journals

Published or accepted

12. *On a Rogers-Ramanujan type identity from crystal base theory* (with J. Lovejoy), Proc. Amer. Math. Soc., to appear, <http://user.math.uzh.ch/dousse/primc.pdf>.
11. *Unification, refinement and companions of generalisations of Schur's theorem*, Special volume in honour of Krishnaswami Alladi's 60th birthday, Springer, to appear, <http://user.math.uzh.ch/dousse/andrewsweight.pdf>.
10. *Siladić's theorem: weighted words, refinement and companion*, Proc. Amer. Math. Soc. (online publication: 18 November 2016), <https://doi.org/10.1090/proc/13376>.
9. *A generalisation of a second theorem of Andrews to overpartitions*, J. Combin. Theory Ser. A. 145, 101–128 (2017), <http://dx.doi.org/10.1016/j.jcta.2016.07.003>.
8. *Overpartitions with restricted odd differences* (with K. Bringmann, J. Lovejoy and K. Mahlburg), Electron. J. Combin. 22, no. 3, paper 3.17 (2015), <http://www.combinatorics.org/ojs/index.php/eljc/article/view/v22i3p17/0>.
7. *An overpartition analogue of the q -binomial coefficients* (with B. Kim), Ramanujan J. 42, 267–283 (2017), <http://dx.doi.org/10.1007/s11139-015-9718-4>.
6. *Asymptotic formulae for partition ranks* (with M. Mertens), Acta Arith. 168, 83–100 (2015), <http://dx.doi.org/10.4064/aa168-1-5>.
5. *A generalisation of a partition theorem of Andrews*, Monats. Math. 179, 227–251 (2016), <http://dx.doi.org/10.1007/s00605-015-0761-4>.
4. *On Dyson's crank conjecture and the uniform asymptotic behavior of certain inverse theta functions* (with K. Bringmann), Trans. Amer. Math. Soc. 368, 3141–3155 (2016), <http://dx.doi.org/10.1090/tran/6409>.
3. *A combinatorial proof and refinement of a partition identity of Siladić*, Eur. J. Comb. 39, 223–232 (2014), <http://dx.doi.org/10.1016/j.ejc.2014.01.008>.
2. *On a generalisation of Roth's theorem for arithmetic progressions and applications to sum-free subsets*, Math. Proc. Camb. Phil. Soc. 155, 331–341 (2013), <http://dx.doi.org/10.1017/S0305004113000327>.
1. *On generalizations of partition theorems of Schur and Andrews to overpartitions*, Ramanujan J. 35 (3), 339–360 (2014), <http://dx.doi.org/10.1007/s11139-013-9532-9>.

Submitted

3. *Generalizations of Capparelli's identity* (with J. Lovejoy),
<http://user.math.uzh.ch/dousse/OverCap.pdf>
2. *An overpartition analogue of the q -binomial coefficients, II: combinatorial proofs and (q, t) -log concavity* (with B. Kim),
<http://user.math.uzh.ch/dousse/overgaussian2.pdf>
1. *Weighted dependency graphs and the Ising model* (with V. Féray),
<http://user.math.uzh.ch/dousse/ising.pdf>

Publications in conference proceedings

- 2017 The method of weighted words revisited, *FPSAC 2017*,
<http://user.math.uzh.ch/dousse/wwrevisited.pdf>.
- 2015 A generalisation of two partition theorems of Andrews, *FPSAC 2015*,
<http://fpsac2015.sciencesconf.org/70995>.

Talks

- 2017 Intercity Number Theory Seminar, Utrecht University, The Netherlands: *Refinement of partition identities and the method of weighted words*.
- 2016 Number theory seminar, Institut Joseph Fourier, Grenoble, France: *Refinement of partition identities and the method of weighted words*.
- 2016 Discrete mathematics seminar, Universität Zürich, Switzerland: *The method of weighted words and partition identities*.
- 2016 "Computations and proofs" seminar, INRIA, Palaiseau, France: *Partition identities and resolution of q -difference equations*.
- 2016 Alladi60 conference, University of Florida, Gainesville, USA: *The method of weighted words and a refinement of Siladić's theorem*.
- 2016 Journées Alea, CIRM, Marseille, France: *Refinement and generalisation of Siladić's theorem*.
- 2016 Discrete mathematics seminar, Universität Zürich, Switzerland: *The two-variable circle method*.
- 2016 Journées de Combinatoire de Bordeaux, LaBRI, Bordeaux, France: *Partition identities and q -difference equations*.
- 2015 Séminaire Fajole, IHP, Paris, France: *The two-variable circle method*.
- 2015 FPSAC 2015, KAIST, Daejeon, Korea: *A generalisation of two partition theorems of Andrews*.
- 2015 Number theory seminar, KIAS, Seoul, Korea: *Generalisation of two partition identities of Andrews*.
- 2015 Combinatorics seminar, LIAFA, Université Paris Diderot, France: *Generalisation of two theorems of Andrews to overpartitions*.
- 2015 Discrete mathematics Seminar, Universität Zürich, Switzerland: *Generalisation of two theorems of Andrews to overpartitions*.

- 2015 *q*-difference equations seminar, Université Paul Sabatier, Toulouse, France: *q*-difference equations and generalisation of two partition identities of Andrews.
- 2014 Number theory seminar, Université de Lorraine, Nancy, France: *Rogers-Ramanujan type partition identities and q-difference equations*.
- 2014 Number theory seminar, KIAS, Seoul, Korea: *Asymptotics for the partition rank and crank*.
- 2014 Combinatorics seminar, LIX, École Polytechnique, France: *Rogers-Ramanujan type partition identities and q-difference equations*.
- 2014 Atelier stéphanois de combinatoire additive, Université de Saint-Étienne, France: *A generalisation of Szemerédi's theorem*.
- 2014 Algebra and number theory Seminar, University College Dublin, Ireland: *On Dyson's crank conjecture*.
- 2014 Journées holonomes, Institut Joseph Fourier, Grenoble, France: *Rogers-Ramanujan type partition identities and q-difference equations*.
- 2013 Séminaire CAESAR, École Polytechnique, France: *A generalisation of Roth's theorem and application to sum-free subsets*.
- 2013 Combinatorics seminar, LIAFA, Université Paris Diderot, France: *Dyson's conjecture on the partition crank*.
- 2013 Number theory seminar, University of Cologne, Germany: *A generalisation of Roth's theorem and application to sum-free subsets*.
- 2013 28th Arithmetic Days, Grenoble, France: *A generalisation of Roth's theorem and application to sum-free subsets*.
- 2013 Journées du GT Combinatoire Algébrique, Université Marne-la-Vallée, France: *Partition identities coming from representations of Lie algebras*.
- 2013 Séminaire CALIN, Université Paris XIII, France: *A generalisation of Roth's theorem*.
- 2013 Combinatorics and number theory seminar, Université Lyon I, France: *Partition identities and q-difference equations*.
- 2012 12th Forum des jeunes mathématiciennes, IHP, Paris, France: *A generalisation of Roth's theorem and application to sum-free subsets*.

Research visits

- July 2015 Seoul National University of Science and Technology, Seoul, Korea.
Coworker: Byungchan Kim
- August 2014 Seoul National University of Science and Technology, Seoul, Korea.
Coworker: Byungchan Kim
- October 2013 Mathematical Institute, University of Cologne, Germany.
Coworker: Kathrin Bringmann
- March–July 2012 Research internship supervised by Ben Green, Centre for Mathematical Sciences, University of Cambridge: *A generalisation of Roth's theorem*.

- June–July 2011 Research internship supervised by Vic Reiner and Pavlo Pylyavskyy, School of Mathematics, University of Minnesota, Minneapolis: *Strongly connected graphs and polynomials*.
- February–May 2011 Research internship supervised by Jeremy Lovejoy, LIAFA, Université Paris Diderot: *Schur's theorem and its generalisations*.
- June–July 2010 Research internship supervised by Frédéric Havet and Dorian Mazauric, INRIA, Sophia Antipolis: *Representation of interval graphs*.

Teaching

- 2016–2017 Teaching assistant, Universität Zürich: *Combinatorics of permutations (undergraduate seminar)*.
- 2016–2017 Teaching assistant, Universität Zürich: *Foundations of mathematics*.
- 2015–2016 Graduate course, Universität Zürich: *Combinatorics of integer partitions*.
- 2012–2015 Teaching assistant, Université Paris Diderot: *q-series and partitions*.
- 2014–2015 Teaching assistant, Université Paris Diderot: *Elementary Algebra and Analysis 1*.
- 2013–2014 Teaching assistant, Université Paris Diderot: *Elementary Algebra and Analysis 2*.
- 2012–2013 Preparation to the oral examination of the French Grandes Écoles in Mathematics, Lycée Chaptal, Paris.

Other professional activities

- Member of the organising committee of FPSAC 2013, Paris.
- Referee for *Integers*, *Journal of Combinatorial Theory Series A*, *Journal of Mathematical Analysis and Applications*, *Journal of Number Theory*, ...

Languages

French	Native speaker
English	Fluent
German	Advanced
Italian	Advanced
Japanese	Intermediate
Spanish	Basic
Russian	Basic