

# Dan Romik

## Publication list

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### Journal publications

1. Arctic circles, domino tilings and square Young tableaux. *Ann. Probab.* 40 (2012), 611–647.
2. Phase transitions in gravitational allocation (joint with Sourav Chatterjee, Ron Peled and Yuval Peres). *Geom. Funct. Anal.* 20 (2010), 870–917.
3. A formula for a doubly refined enumeration of alternating sign matrices (joint with Matan Karklinsky). *Adv. Appl. Math.* 45 (2010), 28–35.
4. More refined enumerations of alternating-sign matrices (joint with Ilse Fischer). *Adv. Math.* 222 (2009), 2004–2035.
5. The oriented swap process (joint with Omer Angel and Alexander E. Holroyd). *Ann. Probab.* 37 (2009), 1970–1998.
6. Enumeration formulas for Young tableaux in a diagonal strip (joint with Yuliy Baryshnikov). *Israel J. Math.* 178 (2010), 157–186.
7. Gravitational allocation to Poisson points (joint with Sourav Chatterjee, Ron Peled and Yuval Peres). *Annals of Math.* 172 (2010), 617–671.
8. Random sorting networks (joint with Omer Angel, Alexander E. Holroyd and Balint Virag). *Adv. Math.* 215 (2007), 839–868.
9. The dynamics of Pythagorean triples. *Trans. Amer. Math. Soc.* 360 (2008), 6045–6064.
10. Integrals, probability and MacMahon’s theorem (joint with George Andrews, Henrik Eriksson and Fedor Petrov). *J. Comb. Theory Ser. A.* 114 (2007), 545–554.
11. Universal finitary codes with exponential tails (joint with Nate Harvey, Alexander Holroyd and Yuval Peres). *Proc. London Math. Soc.* 94 (2007), 475–496.
12. Shortest paths in the Tower of Hanoi graph and finite automata. *SIAM J. Disc. Math.* 20 (2006), 610–622.
13. The number of guillotine partitions in  $d$  dimensions (joint with Eyal Ackerman, Gill Barequet and Ron Pinter). *Inform. Proc. Lett.* 98 (2006), 162–167.

14. Random walks with  $k$ -wise independent increments (joint with Itai Benjamini and Gady Kozma). *Elec. Comm. Prob.* 11 (2006), 100–107.
15. Limit shapes for random square Young tableaux (joint with Boris Pittel). *Adv. Appl. Math.* 38 (2007), 164–209.
16. Permutations with short monotone subsequences. *Adv. Appl. Math.* 37 (2006), 501–510. An extended abstract appeared in *Proc. of EuroComb 2005*.
17. Waiting for a bat to fly by (in polynomial time) (joint with Itai Benjamini, Gady Kozma, László Lovász and Gábor Tardos). *Combinatorics, Probability and Computing.* 15 (2006), 673–683.
18. Roots of the derivative of a polynomial. *Amer. Math. Monthly* 112 (2005), 66–68.
19. Some formulas for the central trinomial and Motzkin numbers. *J. of Integer Sequences* 6 (2003), article 03.2.3.
20. The number of steps in the Robinson-Schensted algorithm. *Funct. Anal. Appl.* 39 (2005), 152–155.
21. On distributions computable by random walks on graphs (joint with Guy Kindler). *SIAM J. Disc. Math.* 17 (2004), 624–633. Also appeared in Proc. of the Fifteenth ACM-SIAM Symposium on Discrete Algorithms (SODA04), 124–131.
22. Integrals, partitions, and cellular automata (joint with Alexander E. Holroyd and Thomas Liggett). *Trans. Amer. Math. Soc.* 356 (2004), 3349–3368.
23. Partitions of  $n$  into  $t\sqrt{n}$  parts. *Europ. J. of Combinatorics* 26 (2005), 1–17.
24. Explicit formulas for hook walks on continual Young diagrams. *Adv. Appl. Math.* 32 (2004), 625–654.
25. Projecting the surface measure of the sphere of  $\ell_p^n$  (joint with Assaf Naor). *Ann. Inst. Henri Poincaré Prob. Stat.* 39 (2003), 241–261.
26. Some Comments on Euler’s Series for  $\frac{\pi^2}{6}$ , *The Math. Gazette*, July 2002, 281–284.
27. Stirling’s Approximation for  $n!$ : the Ultimate Short Proof? *Amer. Math. Monthly* 107 (2000), 556–557.
28. Sharp entropy bounds for discrete statistical simulation. *Statist. Probab. Lett.* 42 (1999), 219–227.

## Publications in conference proceedings

- Local extrema in random permutations and the structure of longest alternating subsequences. To appear in *Disc. Math. Theor. Comp. Sci.* Proceedings of the 23rd International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2011).

## **Preprints**

- New enumeration formulas for alternating sign matrices and square ice partition functions (joint with Arvind Ayyer). Preprint, 2012.
- Jeu de taquin dynamics on infinite Young tableaux and second class particles (joint with Piotr Śniady). Preprint, 2011.

## **Patent applications**

- Method and apparatus for filtering data packets. U.S. Patent Application 20080212597, Y. Baryshnikov, E. H. Grosse, D. Romik, F. X. Zane.