

1 Books

- J. Matoušek, Lectures on Discrete Geometry
- N. Alon and J. Spencer, The Probabilistic Method, 3rd edition
- M. Aigner and G. Ziegler, Proofs from the BOOK
- B. Bollobás, The art of mathematics (Coffee time in Memphis)
- J. Matousek, Thirty-three miniatures: mathematical and algorithmic applications of linear algebra
- S. Jukna, Extremal combinatorics

2 Papers

- P. Erdős and S. Fajtlowicz, On a conjecture of Hajós, *Combinatorica* **1** (1981), 141-143.
and
C. Thomassen, Some remarks on Hajós conjecture, *J. Combin. Theory Ser. B* **93** (2005), 95-105.
- F. Chung, R. Graham, and R. Wilson, Quasi-random graphs, *Combinatorica* **9** (1989), 345-362.
- J. Shearer, A note on the independence number of triangle-free graphs, *Discrete Math* **46** (1983), 83-87.
- A. Schrijver, A short proof of Minc's conjecture, *J. Combinatorial Theory Ser. A* **25** (1978), 80-83. (see also Alon and Spencer book, page 22)
- P. Erdős, J. Pach, J. Pyber, Isomorphic subgraphs in a graph, in: **Combinatorics (Eger, 1987)**, Colloq. Math. Soc. János Bolyai, 52, North-Holland, Amsterdam, 1988, 553-556.
- M. Goemans and D. Williamson, Improved algorithms for maximum cut and satisfiability problems using semidefinite programming, *J. ACM* **42** (1995), 1115-1145.
- P. Erdős and S. Shelah, On a problem of Moser and Hanson, Graph theory and applications, Lecture Notes in Math., Vol. 303, Springer, Berlin (1972), 75-79.
- S. Brandt, On the structure of graphs with bounded clique number, *Combinatorica* **23** (2003), 693-696.

- Hamiltonicity and pancyclicity, G. Dirac, Some theorems on abstract graphs, *Proc. London Math. Soc.*, **2** (1952), 69-81.
and
V. Chvátal and P. Erdős, A note on Hamiltonian circuits, *Discrete Math* **2** (1972), 111-113.
and
P. Erdős, Some problems in graph theory, in: Hypergraph Seminar, Ohio State Univ., Columbus, Ohio, 1972, in: Lecture Notes in Math., vol 411, Springer, Berlin, 1974, 187-190.
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- J. Fox and B. Sudakov, Dependent random choice, *Random Structures Algorithms* **38** (2011), 68–99.
- P. Erdős and E. Szemerédi, On a Ramsey type theorem, *Period. Math. Hungar.* **2** (1972), 295—299.
- N. Alon and D. J. Kleitman, A purely combinatorial proof of the Hadwiger Debrunner (p,q)-conjecture, *Electronic J. Combinatorics* **4** (1997) R1, 8pp.
- J. Kahn, and G. Kalai, A counterexample to Borsuk’s conjecture. *Bull. Amer. Math. Soc.* **29** (1993), 60–62.
- A. Marcus and G. Tardos, Excluded permutation matrices and the Stanley-Wilf conjecture, *J. Combin. Theory Ser. A* **107** (2004), 153–160.
- H. Kaplan, M. Sharir, and E. Shustin, On lines and joints, *Discrete Comput. Geom.* **44** (2010), 838–843.
- A. Pawlik, J. Kozik, T. Krawczyk, M. Lasoń, P. Micek, W. T. Trotter, B. Walczak, Triangle-free intersection graphs of line segments with large chromatic number, preprint.
- N. Alon, L. Babai, H. Suzuki, Multilinear polynomials and Frankl-Ray-Chaudhuri-Wilson type intersection theorems, *J. Combin. Theory Ser. A* **58** (1991), 165–180.
- N. Alon, Combinatorial Nullstellensatz, *Combin. Probab. Comput.* **8** (1999), 7–29.
- M. Laurent and L. Schrijver, On Leonid Gurvits’s proof for permanents, *Amer. Math. Monthly* **117** (2010), 903–911.
- A. Kostochka and M. Yancey, Ore’s conjecture for $k = 4$ and Grötzsch theorem, ArXiv 1209.1173
- C. Reiher, On Kemnitz’ conjecture concerning lattice-points in the plane, *Ramanujan J.* **13** (2007), 333–337.

- J. Spencer: Robin Moser makes Lovász Local Lemma Algorithmic, lecture note.
- N. Alon, S. Hoory, and N. Linial: The Moore bound for irregular graphs, *Graphs Combin.* **18** (2002), 53–57.
- A. D. Flaxman and S. Hoory, Maximum matchings in regular graphs of high girth, *Electron. J. Combin.* **14** (2007), Note 1, 4 pp.
- E. Szemerédi, An old new proof of Roth’s theorem, Additive combinatorics, 51–54, CRM Proc. Lecture Notes, 43, Amer. Math. Soc., Providence, RI, 2007. (Comment: short, but hard paper.)
- J. A. Bondy, Short proofs of classical theorems, *J. Graph Theory* **44** (2003), 159–165.
- B. Arsovski, A proof of Snevily’s conjecture, *Israel J. Math.* **182** (2011), 505–508.
- P. Keevash and D. Mubayi, The Turán number of $F_{3,3}$, *Combin. Probab. Comput.* **21** (2012), 451–456.
- A. Nilli, Tight estimates for eigenvalues of regular graphs, *Electron. J. Combin.* **11** (2004), Note 9, 4 pp.
- Larry Guth’s lecture notes: <http://math.mit.edu/~lguth/PolynomialMethod.html>

3 Topic

- Isoperimetric inequalities of hypercube, for example Harper’s theorem (see B. Bollobás, Combinatorics: set systems, hypergraphs, families of vectors, and combinatorial probability, Cambridge University Press)
- Dijkstra’s algorithm
- Conjugate gradient method
- Adjacency matrix of a graph (Delsarte-Hoffman bound, Expander mixing lemma)