Bibliography

[AA11] Scott Aaronson and Andris Ambainis. The need for structure in quantum speedups. In *Proceedings of the 2nd Annual Innovations in Theoretical Computer Science conference*, pages 338–352, 2011.

[Aar08] Scott Aaronson. How to solve longstanding open problems in quantum computing using only Fourier Analysis. Lecture at Banff International Research Station, 2008. http://www.scottaaronson.com/talks/openqc.ppt.

[ABH+05] Sanjeev Arora, Eli Berger, Elad Hazan, Guy Kindler, and Muli Safra. On non-approximability for quadratic programs. In *Proceedings of the 46th Annual IEEE Symposium on Foundations of Computer Science*, pages 206–215, 2005.

[ABI85] Noga Alon, László Babai, and Alon Itai. A fast and simple randomized algorithm for the maximal independent set problem. *Journal of Algorithms*, 7(4):567–583, 1985.

[AC79] Robert Adams and Frank Clarke. Gross's logarithmic Sobolev inequality: a simple proof. *American Journal of Mathematics*, 101(6):1265–1269, 1979.

[AF99] Dimitris Achlioptas and Ehud Friedgut. A sharp threshold for k-colorability. *Random Structures & Algorithms*, 14(1):63–70, 1999.

[AFP00] Luigi Ambrosio, Nicola Fusco, and Diego Pallara. *Functions of bounded variation and free discontinuity problems*. Oxford University Press, 2000.

[AFR13] Luigi Ambrosio, Alessio Figalli, and Eris Runa. On sets of finite perimeter in Wiener spaces: reduced boundary and convergence to halfspaces. *Atti della Accademia Nazionale dei Lincei. Classe di Scienze Fisiche, Matematiche e Naturali. Rendiconti Lincei. Serie IX. Matematica e Applicazioni*, 24(1):111–122, 2013.

[AGHP92] Noga Alon, Oded Goldreich, Johan Håstad, and René Peralta. Simple constructions of almost k-wise independent random variables. *Random Structures & Algorithms*, 3(3):289–304, 1992.

[Ajt83] Miklós Ajtai. Σ_1^1-formulae on finite structures. *Annals of Pure and Applied Logic*, 24(1):1–48, 1983.

[AL93] Miklós Ajtai and Nathal Linial. The influence of large coalitions. *Combinatorica*, 13(2):129–145, 1993.

[ALM+98] Sanjeev Arora, Carsten Lund, Rajeev Motwani, Madhu Sudan, and Mario Szegedy. Proof verification and the hardness of approximation problems. *Journal of the ACM*, 45(3):501–555, 1998.

[Ama11] Kazuyuki Amano. Tight bounds on the average sensitivity of k-CNF. *Theory of Computing*, 7(1):45–48, 2011.

[Amb03] Andris Ambainis. Polynomial degree vs. quantum query complexity. In *Proceedings of the 44th Annual IEEE Symposium on Foundations of Computer Science*, pages 230–239, 2003.

[AMMP10] Luigi Ambrosio, Michele Miranda Jr., Stefania Maniglia, and Diego Pallara. BV functions in abstract Wiener spaces. *Journal of Functional Analysis*, 258(3):785–813, 2010.

[AN05] Dimitris Achlioptas and Assaf Naor. The two possible values of the chromatic number of a random graph. *Annals of Mathematics*, 162(3):1335–1351, 2005.

[Arr50] Kenneth Arrow. A difficulty in the concept of social welfare. *The Journal of Political Economy*, 58(4):328–346, 1950.

[Arr63] Kenneth Arrow. *Social choice and individual values*. Cowles Foundation, 1963.

[AS98] Sanjeev Arora and Shmuel Safra. Probabilistic checking of proofs: A new characterization of NP. *Journal of the ACM*, 45(1):70–122, 1998.

[AS00] Noga Alon and Benjamin Sudakov. Bipartite subgraphs and the smallest eigenvalue. *Combinatorics, Probability and Computing*, 9(1):1–12, 2000.

[AS08] Noga Alon and Joel H. Spencer. *The Probabilistic Method*. Wiley–Interscience, third edition, 2008.

[ASZ02] Noga Alon, Benny Sudakov, and Uri Zwick. Constructing worst case instances for semidefinite programming based approximation algorithms. *SIAM Journal on Discrete Mathematics*, 15(1):58–72, 2002.

[Aus07a] Per Austrin. Balanced Max-2Sat might not be hardest. In *Proceedings of the 39th Annual ACM Symposium on Theory of Computing*, pages 189–197, 2007.

[Aus07b] Per Austrin. Towards sharp inapproximability for any 2-CSP. In *Proceedings of the 48th Annual IEEE Symposium on Foundations of Computer Science*, pages 307–317, 2007.

[Bak94] Dominique Bakry. L'hypercontractivité et son utilisation en théorie des semigroupes. In *Lectures on probability theory (Saint-Flour, 1992)*, volume 1581 of *Lecture Notes in Mathematics*, pages 1–114. Springer, Berlin, 1994.

[Bal93] Keith Ball. The reverse isoperimetric problem for Gaussian measure. *Discrete and Computational Geometry*, 10(4):411–420, 1993.

[Bal13] Deepak Bal. On sharp thresholds of monotone properties: Bourgain's proof revisited. Technical Report 1302.1162, arXiv, 2013.

[Ban65] John Banzhaf. Weighted voting doesn't work: A mathematical analysis. *Rutgers Law Review*, 19:317–343, 1965.

[BBB+13] Keith Ball, Franck Barthe, Witold Bednorz, Krzysztof Oleszkiewicz, and Paweł Wolff. L^1-smoothing for the Ornstein–Uhlenbeck semigroup. *Mathematika*, 59(1):160–168, 2013.

[BBH+12] Boaz Barak, Fernando Brandão, Aram Harrow, Jonathan Kelner, David Steurer, and Yuan Zhou. Hypercontractivity, sum-of-squares proofs, and their applications. In *Proceedings of the 44th Annual ACM Symposium on Theory of Computing*, pages 307–326, 2012.

[BC99] Anna Bernasconi and Bruno Codenotti. Spectral analysis of Boolean functions as a graph eigenvalue problem. *IEEE Transactions on Computers*, 48(3):345–351, 1999.

[BCH+96] Mihir Bellare, Don Coppersmith, Johan Håstad, Marcos Kiwi, and Madhu Sudan. Linearity testing in characteristic two. *IEEE Transactions on Information Theory*, 42(6):1781–1795, 1996.

[BÉ85] Dominiques Bakry and Michel Émery. Diffusions hypercontractives. In *Séminaire de Probabilités, XIX*, volume 1123 of *Lecture Notes in Mathematics*, pages 177–206. Springer, Berlin, 1985.

[Bea94] Paul Beame. A switching lemma primer. Technical Report UW-CSE-95-07-01, University of Washington, 1994.

[Bec75] William Beckner. Inequalities in Fourier analysis. *Annals of Mathematics*, 102:159–182, 1975.

[Bec92] William Beckner. Sobolev inequalities, the Poisson semigroup, and analysis on the sphere s^n. *Proceedings of the National Academy of Sciences*, 89(11):4816–4819, 1992.

[BEHW87] Anselm Blumer, Andrzej Ehrenfeucht, David Haussler, and Manfred Warmuth. Occam's razor. *Information Processing Letters*, 24(6):377–380, 1987.

[Ben84] Yoav Benyamini. Two-point symmetrization, the isoperimetric inequality on the sphere and some applications. In *Texas functional analysis seminar, 1983–1984*, volume 1984, pages 53–76, 1984.

[Ben04] Vidmantas Bentkus. A Lyapunov type bound in $\mathbf{R}^d$. *Rossiĭskaya Akademiya Nauk. Teoriya Veroyatnosteĭ i ee Primeneniya*, 49(2):400–410, 2004.

[Ber41] Andrew Berry. The accuracy of the Gaussian approximation to the sum of independent variates. *Transactions of the American Mathematical Society*, 49(1):122–139, 1941.

[BG99] Sergey Bobkov and Friedrich Götze. Discrete isoperimetric and Poincaré-type inequalities. *Probability Theory and Related Fields*, 114(2):245–277, 1999.

[BGR09] Steven Brams, William Gehrlein, and Fred Roberts, editors. *The Mathematics of Preference, Choice and Order*. Springer, 2009.

[BGS95] Mihir Bellare, Oded Goldreich, and Madhu Sudan. Free bits, PCPs, and non-approximability — towards tight results. Technical Report TR95-024, Electronic Colloquium on Computational Complexity, 1995.

[BGS98] Mihir Bellare, Oded Goldreich, and Madhu Sudan. Free bits, PCPs, and non-approximability — towards tight results. *SIAM Journal of Computing*, 27(3):804–915, 1998.

[BH57] Simon Broadbent and John Hammersley. Percolation processes I. Crystals and mazes. *Mathematical Proceedings of the Cambridge Philosophical Society*, 53(3):629–641, 1957.

[BH84] Andrew Barbour and Peter Hall. Stein's method and the Berry–Esseen theorem. *Australian Journal of Statistics*, 26(1):8–15, 1984.

[BI87] Manuel Blum and Russell Impagliazzo. Generic oracles and oracle classes. In *Proceedings of the 28th Annual IEEE Symposium on Foundations of Computer Science*, pages 118–126, 1987.

[Bik66] Algimantas Bikelis. Estimates of the remainder in a combinatorial central limit theorem. *Litovskii Matematicheskii Sbornik*, 6(3):323–346, 1966.

[BKK+92] Jean Bourgain, Jeff Kahn, Gil Kalai, Yitzhak Katznelson, and Nathan Linial. The influence of variables in product spaces. *Israel Journal of Mathematics*, 77(1):55–64, 1992.

[BKS99] Itai Benjamini, Gil Kalai, and Oded Schramm. Noise sensitivity of Boolean functions and applications to percolation. *Publications Mathématiques de l'IHÉS*, 90(1):5–43, 1999.

[BL76] Herm Brascamp and Elliott Lieb. Best constants in Young's inequality, its converse, and its generalization to more than three functions. *Advances in Mathematics*, 20(2):151–173, 1976.

[BL85] Michael Ben-Or and Nathan Linial. Collective coin flipping, robust voting schemes and minima of Banzhaf values. In *Proceedings of the 26th Annual IEEE Symposium on Foundations of Computer Science*, pages 408–416, 1985.

[BL90] Michael Ben-Or and Nathan Linial. Collective coin flipping. In Silvio Micali and Franco Preparata, editors, *Randomness and Computation*, volume 5 of *Advances in Computing Research: A research annual*, pages 91–115. JAI Press, 1990.

[BL96] Dominique Bakry and Michel Ledoux. Lévy–Gromov's isoperimetric inequality for an infinite dimensional diffusion generator. *Inventiones mathematicae*, 123(1):259–281, 1996.

[BL98] Sergey Bobkov and Michel Ledoux. On modified logarithmic Sobolev inequalities for Bernoulli and Poisson measures. *Journal of Functional Analysis*, 156(2):347–365, 1998.

[Bla57] Julian Blau. The existence of social welfare functions. *Econometrica*, 25(2):302–313, 1957.

[BLR90] Manuel Blum, Michael Luby, and Ronitt Rubinfeld. Self-testing/correcting with applications to numerical problems. In *Proceedings of the 22nd Annual ACM Symposium on Theory of Computing*, pages 73–83, 1990.

[Blu03] Avrim Blum. Learning a function of r relevant variables. In Bernhard Schölkopf and Manfred Warmuth, editors, *Proceedings of the 16th Annual Conference on Learning Theory*, volume 2777 of *Lecture Notes in Computer Science*, pages 731–733, 2003.

[BM00a] Franck Barthe and Bernard Maurey. Some remarks on isoperimetry of Gaussian type. *Annales de l'Institut Henri Poincaré. Probabilités et Statistiques*, 36(4):419–434, 2000.

[BM00b] Vitaly Bergelson and Randall McCutcheon. An ergodic IP polynomial Szemerédi theorem. *Memoirs of the American Mathematical Society*, 146(695):vii–106, 2000.

[Bob97] Sergey Bobkov. An isoperimetric inequality on the discrete cube and an elementary proof of the isoperimetric inequality in Gauss space. *Annals of Probability*, 25(1):206–214, 1997.

[Bog98] Vladimir Bogachev. *Gaussian Measures*. Mathematical Series and Monographs. American Mathematical Society, 1998.

[BOH90] Yigal Brandman, Alon Orlitsky, and John Hennessy. A spectral lower bound technique for the size of decision trees and two-level AND/OR circuits. *IEEE Transactions on Computers*, 39(2):282–287, 1990.

[Bol84] Erwin Bolthausen. An estimate of the remainder in a combinatorial central limit theorem. *Probability Theory and Related Fields*, 66(3):379–386, 1984.

[Bol01] Béla Bollobás. *Random Graphs*. Cambridge Studies in Advanced Mathematics, Cambridge University Press, Cambridge, 2001.

[Bon68] Aline Bonami. Ensembles $\Lambda(p)$ dans le dual de D^∞. *Annales de l'Institut Fourier*, 18(2):193–204, 1968.

[Bon70] Aline Bonami. Étude des coefficients Fourier des fonctions de $L^p(G)$. *Annales de l'Institut Fourier*, 20(2):335–402, 1970.

[Bop97] Ravi Boppana. The average sensitivity of bounded-depth circuits. *Information Processing Letters*, 63(5):257–261, 1997.

[Bor75] Christer Borell. The Brunn–Minkowski inequality in Gauss space. *Inventiones Mathematicae*, 30(2):207–216, 1975.

[Bor79] Christer Borell. On the integrability of Banach space valued Walsh polynomials. In *Séminaire de Probabilités, XIII*, volume 721 of *Lecture Notes in Mathematics*, pages 1–3. Springer, Berlin, 1979.

[Bor82] Christer Borell. Positivity improving operators and hypercontractivity. *Mathematische Zeitschrift*, 180(2):225–234, 1982.

[Bor84] Christer Borell. On polynomial chaos and integrability. *Probabability and Mathematical Statistics*, 3(2):191–203, 1984.

[Bor85] Christer Borell. Geometric bounds on the Ornstein–Uhlenbeck velocity process. *Probability Theory and Related Fields*, 70(1):1–13, 1985.

[Bou79] Jean Bourgain. Walsh subspaces of l^p product spaces. In *Séminaire D'Analyse Fonctionnelle*, pages IV.1–IV.9. École Polytechnique, Centre De Mathématiques, 1979.

[Bou99] Jean Bourgain. On sharp thresholds of monotone properties. *Journal of the American Mathematical Society*, 12(4):1046–1053, 1999. Appendix to the main paper, *Sharp thresholds of graph properties, and the k-sat problem* by Ehud Friedgut.

[BOW10] Eric Blais, Ryan O'Donnell, and Karl Wimmer. Polynomial regression under arbitrary product distributions. *Machine Learning*, 80(2):273–294, 2010.

[BR73] Leonid Balashov and Aleksandr Rubinshtein. Series with respect to the Walsh system and their generalizations. *Journal of Soviet Mathematics*, 1(6):727–763, 1973.

[BR08] Béla Bollobás and Oliver Riordan. Random graphs and branching processes. In Béla Bollobás, Robert Kozma, and Dezső Miklós, editors, *Handbook of large-scale random networks*, pages 15–116. Springer, 2008.

[Bra87] Yigal Brandman. *Spectral lower-bound techniques for logic circuits*. PhD thesis, Stanford University, 1987.

[Bru90] Jehoshua Bruck. Harmonic analysis of polynomial threshold functions. *SIAM Journal on Discrete Mathematics*, 3(2):168–177, 1990.

[BS92] Jehoshua Bruck and Roman Smolensky. Polynomial threshold functions, AC^0 functions and spectral norms. *SIAM Journal on Computing*, 21(1):33–42, 1992.

[BS08] Eli Ben-Sasson and Madhu Sudan. Short PCPs with polylog query complexity. *SIAM Journal on Computing*, 38(2):551–607, 2008.

[BSGH+04] Eli Ben-Sasson, Oded Goldreich, Prahladh Harsha, Madhu Sudan, and Salil Vadhan. Robust PCPs of proximity, shorter PCPs and applications to coding. In *Proceedings of the 36th Annual ACM Symposium on Theory of Computing*, pages 1–10, 2004.

[BSSVW03] Eli Ben-Sasson, Madhu Sudan, Salil Vadhan, and Avi Wigderson. Randomness-efficient low degree tests and short PCPs via epsilon-biased sets. In *Proceedings of the 35th Annual ACM Symposium on Theory of Computing*, pages 612–621, 2003.

[BSW05] Itai Benjamini, Oded Schramm, and David Wilson. Balanced Boolean functions that can be evaluated so that every input bit is unlikely to be read. In *Proceedings of the 37th Annual ACM Symposium on Theory of Computing*, pages 244–250, 2005.

[BT76] Albert Baernstein and Bert Taylor. Spherical rearrangements, subharmonic functions, and $*$-functions in n-space. *Duke Mathematical Journal*, 43(2):245–268, 1976.

[BT87] Béla Bollobás and Andrew Thomason. Threshold functions. *Combinatorica*, 7(1):35–38, 1987.

[BT96] Nader Bshouty and Christino Tamon. On the Fourier spectrum of monotone functions. *Journal of the ACM*, 43(4):747–770, 1996.

[BT09] Avraham Ben-Aroya and Amnon Ta-Shma. Constructing small-bias sets from algebraic-geometric codes. In *Proceedings of the 50th Annual IEEE Symposium on Foundations of Computer Science*, pages 191–197, 2009.

[BV07] Andrej Bogdanov and Emanuele Viola. Pseudorandom bits for polynomials. In *Proceedings of the 48th Annual IEEE Symposium on Foundations of Computer Science*, pages 41–51, 2007.

[Car10] Claude Carlet. Boolean functions for cryptography and error-correcting codes. In Yves Crama and Peter Hammer, editors, *Boolean models and methods in mathematics, computer science, and engineering*, pages 257–397. Cambridge University Press, 2010.

[CFG$^+$85] Benny Chor, Joel Friedmann, Oded Goldreich, Johan Håstad, Steven Rudich, and Roman Smolensky. The bit extraction problem or t-resilient functions. In *Proceedings of the 26th Annual IEEE Symposium on Foundations of Computer Science*, pages 396–407, 1985.

[CG92] Fan Chung and Ronald Graham. Quasi-random subsets of $\mathbb{Z}_n$. *Journal of Combinatorial Theory, Series A*, 61:64–86, 1992.

[CGG87] Benny Chor and Mihály Geréb-Graus. On the influence of single participant in coin flipping schemes. Technical report, Harvard University, 1987.

[CGG88] Benny Chor and Mihály Geréb-Graus. On the influence of single participant in coin flipping schemes. *SIAM Journal on Discrete Mathematics*, 1(4):411–415, 1988.

[CGS11] Louis Chen, Larry Goldstein, and Qi-Man Shao. *Normal approximation by SteinŠs method*. Springer, 2011.

[CGW89] Fan Chung, Ronald Graham, and Richard Wilson. Quasi-random graphs. *Combinatorica*, 9(4):345–362, 1989.

[Che60] Pafnuty Chebyshev. Sur le développement des fonctions à une seule variable. *Bulletin de l'Académie impériale des sciences de St.-Pétersbourg*, 1:193–200, 1860.

[CHL97] Mireille Capitaine, Elton Hsu, and Michel Ledoux. Martingale representation and a simple proof of logarithmic Sobolev inequalities on path spaces. *Electronic Communications in Probability*, 2:71–81, 1997.

[Cho61] Chao-Kong Chow. On the characterization of threshold functions. In *Proceedings of the 2nd Annual Symposium on Switching Circuit Theory and Logical Design (FOCS)*, pages 34–38, 1961.

[CKS01] Nadia Creignou, Sanjeev Khanna, and Madhu Sudan. *Complexity classifications of Boolean constraint satisfaction problems*. Society for Industrial and Applied Mathematics, 2001.

[CL90] Eric Carlen and Michael Loss. Extremals of functionals with competing symmetries. *Journal of Functional Analysis*, 88(2):437–456, 1990.

[Col71] John Coleman. Control of collectivities and the power of a collectivity to act. In Bernhardt Lieberman, editor, *Social Choice*. Gordon and Leach, 1971.

[CW01] Anthony Carbery and James Wright. Distributional and L^q norm inequalities for polynomials over convex bodies in $\mathbb{R}^n$. *Mathematical Research Letters*, 8(3):233–248, 2001.

[CW04] Moses Charikar and Anthony Wirth. Maximizing quadratic programs: Extending Grothendieck's Inequality. In *Proceedings of the 45th Annual IEEE Symposium on Foundations of Computer Science*, pages 54–60, 2004.

[dC85] Nicolas de Condorcet. *Essai sur l'application de l'analyse à la probabilité des décisions rendues à la pluralité des voix*. Paris, de l'imprimerie royale, 1785.

[DF87] Persi Diaconis and David Freedman. A dozen de Finetti-style results in search of a theorem. *Annales de l'Institut Henri Poincaré (B)*, 23(S2):397–423, 1987.

[DFKO07] Irit Dinur, Ehud Friedgut, Guy Kindler, and Ryan O'Donnell. On the Fourier tails of bounded functions over the discrete cube. *Israel Journal of Mathematics*, 160(1):389–412, 2007.

[DHK+10] Ilias Diakonikolas, Prahladh Harsha, Adam Klivans, Raghu Meka, Prasad Raghavendra, Rocco Servedio, and Li-Yang Tan. Bounding the average sensitivity and noise sensitivity of polynomial threshold functions. In *Proceedings of the 42nd Annual ACM Symposium on Theory of Computing*, pages 533–542, 2010.

[Dic01] Leonard Dickson. *Linear groups with an exposition of Galois field theory*. B. G. Teubner, 1901.

[Dil72] John Dillon. A survey of bent functions. *The NSA Technical Journal*, pages 191–215, 1972.

[Din07] Irit Dinur. The PCP Theorem by gap amplification. *Journal of the ACM*, 54(3):1–44, 2007.

[dKPW04] Etienne de Klerk, Dmitrii Pasechnik, and Johannes Warners. On approximate graph colouring and MAX-k-CUT algorithms based on the ϑ-function. *Journal of Combinatorial Optimization*, 8(3):267–294, 2004.

[DMN12] Anindya De, Elchanan Mossel, and Joe Neeman. Majority is Stablest : discrete and SoS. Technical Report 1211.1001, arXiv, 2012.

[DP93] Charles Delorme and Svatopluk Poljak. Laplacian eigenvalues and the maximum cut problem. *Mathematical Programming*, 62(1–3):557–574, 1993.

[DR04] Irit Dinur and Omer Reingold. Assignment testers: Towards a combinatorial proof of the PCP Theorem. In *Proceedings of the 45th Annual IEEE Symposium on Foundations of Computer Science*, pages 155–164, 2004.

[DS09] Ilias Diakonikolas and Rocco Servedio. Improved approximation of linear threshold functions. In *Proceedings of the 24th Annual IEEE Conference on Computational Complexity*, pages 161–172, 2009.

[DSC96] Persi Diaconis and Laurent Saloff-Coste. Logarithmic Sobolev inequalities for finite Markov chains. *Annals of Applied Probability*, 6(3):695–750, 1996.

[Ehr83] Antoine Ehrhard. Symétrisation dans l'espace de gauss. *Mathematica Scandinavica*, 53:281–301, 1983.

[Ehr84] Antoine Ehrhard. Inégalités isopérimétriques et intégrales de Dirichlet gaussiennes. *Annales Scientifiques de l'École Normale Supérieure. Quatrième Série*, 17(2):317–332, 1984.

[Ein05] Albert Einstein. Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen. *Annalen der physik*, 322(8):549–560, 1905.

[EKR99] Funda Ergün, Ravi Kumar, and Ronitt Rubinfeld. Fast approximate PCPs. In *Proceedings of the 31st Annual ACM Symposium on Theory of Computing*, pages 41–50, 1999.

[Eld13] Ronen Eldan. A two-sided estimate for the Gaussian noise stability deficit. Technical Report 1307.2781, arXiv, 2013.

[Elg61] Calvin Elgot. Truth functions realizable by single threshold organs. In *Proceedings of the 2nd Annual Symposium on Switching Circuit Theory and Logical Design (FOCS)*, pages 225–245, 1961.

[Enf70] Per Enflo. On the nonexistence of uniform homeomorphisms between l_p-spaces. *Arkiv för matematik*, 8(2):103–105, 1970.

[Epp89] Jay Epperson. The hypercontractive approach to exactly bounding an operator with complex Gaussian kernel. *Journal of Functional Analysis*, 87(1):1–30, 1989.

[ER59] Paul Erdős and Alfréd Rényi. On random graphs I. *Publicationes Mathematicae Debrecen*, 6:290–297, 1959.

[ES81] Bradley Efron and Charles Stein. The jackknife estimate of variance. *Annals of Statistics*, 9(3):586–596, 1981.

[Ess42] Carl-Gustav Esseen. On the Liapounoff limit of error in the theory of probability. *Arkiv för matematik, astronomi och fysik*, 28(9):1–19, 1942.

[Fed69] Paul Federbush. Partially alternate derivation of a result of Nelson. *Journal of Mathematical Physics*, 10:50–52, 1969.

[FGL+96] Uriel Feige, Shafi Goldwasser, László Lovász, Shmuel Safra, and Mario Szegedy. Interactive proofs and the hardness of approximating cliques. *Journal of the ACM*, 43(2):268–292, 1996.

[Fin49] Nathan Fine. On the Walsh functions. *Transactions of the American Mathematical Society*, 65(3):372–414, 1949.

[FJS91] Merrick Furst, Jeffrey Jackson, and Sean Smith. Improved learning of AC^0 functions. In *Proceedings of the 4th Annual Conference on Learning Theory*, pages 317–325, 1991.

[FK96] Ehud Friedgut and Gil Kalai. Every monotone graph property has a sharp threshold. *Proceedings of the American Mathematical Society*, 124(10):2993–3002, 1996.

[FKN02] Ehud Friedgut, Gil Kalai, and Assaf Naor. Boolean functions whose Fourier transform is concentrated on the first two levels and neutral social choice. *Advances in Applied Mathematics*, 29(3):427–437, 2002.

[FL92] Uriel Feige and Lászlo Lovász. Two-prover one-round proof systems, their power and their problems. In *Proceedings of the 24th Annual ACM Symposium on Theory of Computing*, pages 733–744, 1992.

[FL06] Uriel Feige and Michael Langberg. The RPR^2 rounding technique for semidefinite programs. *Journal of Algorithms*, 60(1):1–23, 2006.

[FLM77] Tadeusz Figiel, Joram Lindenstrauss, and Vitali Milman. The dimension of almost spherical sections of convex bodies. *Acta Mathematica*, 139(1-2):53–94, 1977.

[Fre79] Rūsiņš Freivalds. Fast probabilistic algorithms. In *Proceedings of the 4th Annual International Symposium on Mathematical Foundations of Computer Science*, pages 57–69, 1979.

[Fri98] Ehud Friedgut. Boolean functions with low average sensitivity depend on few coordinates. *Combinatorica*, 18(1):27–36, 1998.

[Fri99] Ehud Friedgut. Sharp thresholds of graph properties, and the k-SAT problem. *Journal of the American Mathematical Society*, 12(4):1017–1054, 1999.

[Fri05] Ehud Friedgut. Hunting for sharp thresholds. *Random Structures & Algorithms*, 26(1-2):37–51, 2005.

[FS95] Katalin Friedl and Madhu Sudan. Some improvements to total degree tests. In *Proceedings of the 3rd Annual Israel Symposium on Theory of Computing Systems*, pages 190–198, 1995.

[FS02] Uriel Feige and Gideon Schechtman. On the optimality of the random hyperplane rounding technique for Max-Cut. *Randoom Structures and Algorithms*, 20(3):403–440, 2002.

[FS07] Dvir Falik and Alex Samorodnitsky. Edge-isoperimetric inequalities and influences. *Combinatorics, Probability and Computing*, 16(5):693–712, 2007.

[FSS84] Merrick Furst, James Saxe, and Michael Sipser. Parity, circuits, and the polynomial-time hierarchy. *Mathematical Systems Theory*, 17(1):13–27, 1984.

[GGR98] Oded Goldreich, Shafi Goldwasser, and Dana Ron. Property testing and its connections to learning and approximation. *Journal of the ACM*, 45(4):653–750, 1998.

[Gir73] Vyacheslav Girko. Limit theorems for random quadratic forms. *Izdat. Naukova Dumka*, pages 14–30, 1973.

[GK68] Mark Garman and Morton Kamien. The paradox of voting: probability calculations. *Behavioral Science*, 13(4):306–316, 1968.

[GKK08] Parikshit Gopalan, Adam Kalai, and Adam Klivans. Agnostically learning decision trees. In *Proceedings of the 40th Annual ACM Symposium on Theory of Computing*, pages 527–536, 2008.

[GL89] Oded Goldreich and Leonid Levin. A hard-core predicate for all one-way functions. In *Proceedings of the 21st Annual ACM Symposium on Theory of Computing*, pages 25–32, 1989.

[GL94] Craig Gotsman and Nathan Linial. Spectral properties of threshold functions. *Combinatorica*, 14(1):35–50, 1994.

[Gli68] James Glimm. Boson fields with nonlinear selfinteraction in two dimensions. *Communications in Mathematical Physics*, 8(1):12–25, 1968.

[GMR12] Parikshit Gopalan, Raghu Meka, and Omer Reingold. DNF sparsification and a faster deterministic counting algorithm. In *Proceedings of the 26th Annual IEEE Conference on Computational Complexity*, pages 126–135, 2012.

[Gol59] Solomon Golomb. On the classification of Boolean functions. *IRE Transactions on Circuit Theory*, 6(5):176–186, 1959.

[GOS+11] Parikshit Gopalan, Ryan O'Donnell, Rocco Servedio, Amir Shpilka, and Karl Wimmer. Testing Fourier dimensionality and sparsity. *SIAM Journal on Computing*, 40(4):1075–1100, 2011.

[Gow01] W. Timothy Gowers. A new proof of szemerédi's theorem. *Geometric and Functional Analysis*, 11(3):465–588, 2001.

[GOWZ10] Parikshit Gopalan, Ryan O'Donnell, Yi Wu, and David Zuckerman. Fooling functions of halfspaces under product distributions. In *Proceedings of the 25th Annual IEEE Conference on Computational Complexity*, pages 223–234, 2010.

[GR00] Mikael Goldmann and Alexander Russell. Spectral bounds on general hard core predicates. In *Proceedings of the 17th Annual Symposium on Theoretical Aspects of Computer Science*, pages 614–625, 2000.

[Gro72] Leonard Gross. Existence and uniqueness of physical ground states. *Journal of Functional Analysis*, 10:52–109, 1972.

[Gro75] Leonard Gross. Logarithmic Sobolev inequalities. *American Journal of Mathematics*, 97(4):1061–1083, 1975.

[GS08] Ben Green and Tom Sanders. Boolean functions with small spectral norm. *Geometric and Functional Analysis*, 18(1):144–162, 2008.

[Gui52] George-Théodule Guilbaud. Les théories de l'intérêt général et le problème logique de l'agrégation. *Economie appliquée*, V(4):501–551, 1952.

[GW94] Michel Goemans and David Williamson. A 0.878 approximation algorithm for MAX-2SAT and MAX-CUT. In *Proceedings of the 26th Annual ACM Symposium on Theory of Computing*, pages 422–431, 1994.

[GW95] Michel Goemans and David Williamson. Improved approximation algorithms for maximum cut and satisfiability problems using semidefinite programming. *Journal of the ACM*, 42:1115–1145, 1995.

[Haa10] Alfréd Haar. Zur Theorie der orthogonalen Funktionensysteme. *Mathematische Annalen*, 69(3):331–371, 1910.

[Haa82] Uffe Haagerup. The best constants in the Khinchine inequality. *Studia Mathematica*, 70(3):231–283, 1982.

[Háj68] Jaroslav Hájek. Asymptotic normality of simple linear rank statistics under alternatives. *Annals of Mathematical Statistics*, 39(2):325–346, 1968.

[Har64] Lawrence Harper. Optimal assignments of numbers to vertices. *Journal of the Society for Industrial and Applied Mathematics*, 12(1):131–135, 1964.

[Hås87] Johan Håstad. *Computational Limitations for Small Depth Circuits*. MIT Press, 1987.

[Hås96] Johan Håstad. Testing of the long code and hardness for clique. In *Proceedings of the 28th Annual ACM Symposium on Theory of Computing*, pages 11–19, 1996.

[Hås97] Johan Håstad. Some optimal inapproximability results. In *Proceedings of the 29th Annual ACM Symposium on Theory of Computing*, pages 1–10, 1997.

[Hås99] Johan Håstad. Clique is hard to approximate within $n^{1-\epsilon}$. *Acta Mathematica*, 182(1):105–142, 1999.

[Hås01a] Johan Håstad. A slight sharpening of LMN. *Journal of Computer and System Sciences*, 63(3):498–508, 2001.

[Hås01b] Johan Håstad. Some optimal inapproximability results. *Journal of the ACM*, 48(4):798–859, 2001.

[Hås12] Johan Håstad. On the correlation of parity and small-depth circuits. Technical Report TR12-137, Electronic Colloquium on Computational Complexity, 2012.

[Hat12] Hamed Hatami. A structure theorem for Boolean functions with small total influences. *Annals of Mathematics*, 176(1):509–533, 2012.

[Her64] Charles Hermite. Sur un nouveau développement en série des fonctions. *Comptes rendus de l'Académie des sciences*, 58(2):93–100,266–273, 1864.

[Hin10] Masanori Hino. Sets of finite perimeter and the Hausdorff-Gauss measure on the Wiener space. *Journal of Functional Analysis*, 258(5):1656–1681, 2010.

[HKM10] Prahladh Harsha, Adam Klivans, and Raghu Meka. Bounding the sensitivity of polynomial threshold functions. In *Proceedings of the 42nd Annual ACM Symposium on Theory of Computing*, pages 533–542, 2010.

[HMM82] Stanley Hurst, D. Michael Miller, and Jon Muzio. Spectral method of Boolean function complexity. *Electronics Letters*, 18(13):572–574, 1982.

[Hoe48] Wassily Hoeffding. A class of statistics with asymptotically normal distribution. *Annals of Mathematical Statistics*, 19(3):293–325, 1948.

[HY95] Yasunari Higuchi and Nobuo Yoshida. Analytic conditions and phase transition for Ising models. Unpublished lecture notes (in Japanese), 1995.

[IMP12] Russell Impagliazzo, William Matthews, and Ramamohan Paturi. A satisfiability algorithm for AC^0. In *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 961–972, 2012.

[Jac95] Jeffrey Jackson. *The Harmonic Sieve: a novel application of Fourier analysis to machine learning theory and practice*. PhD thesis, Carnegie Mellon University, 1995.

[Jac97] Jeffrey Jackson. An efficient membership-query algorithm for learning DNF with respect to the uniform distribution. *Journal of Computer and System Sciences*, 55(3):414–440, 1997.

[Jan97] Svante Janson. *Gaussian Hilbert Spaces*. Cambridge University Press, 1997.

[JKS03] T. S. Jayram, Ravi Kumar, and D. Sivakumar. Two applications of information complexity. In *Proceedings of the 35th Annual ACM Symposium on Theory of Computing*, pages 673–682, 2003.

[Joh74] David Johnson. Approximation algorithms for combinatorial problems. *Journal of Computer and System Sciences*, 9(3):256–278, 1974.

[JOW12] Jacek Jendrej, Krzysztof Oleszkiewicz, and Jakub Wojtaszczyk. On some extensions of the FKN theorem. Manuscript, 2012.

[JZ11] Rahul Jain and Shengyu Zhang. The influence lower bound via query elimination. *Theory of Computing*, 7(1):147–153, 2011.

[Kah68] Jean-Pierre Kahane. *Some random series of functions*. D. C. Heath & Co., 1968.

[Kal02] Gil Kalai. A Fourier-theoretic perspective on the Condorcet paradox and Arrow's theorem. *Advances in Applied Mathematics*, 29(3):412–426, 2002.

[Kan11] Daniel Kane. *On Elliptic Curves, the ABC Conjecture, and Polynomial Threshold Functions*. PhD thesis, Harvard University, 2011.

[Kan12] Daniel Kane. The correct exponent for the Gotsman–Linial conjecture. Technical Report 1210.1283, arXiv, 2012.

[Kar76] Mark Karpovsky. *Finite orthogonal series in the design of digital devices: analysis, synthesis, and optimization*. Wiley, 1976.

[Kar99] Howard Karloff. How good is the Goemans–Williamson MAX CUT algorithm? *SIAM Journal of Computing*, 29(1):336–350, 1999.

[Kha93] Michael Kharitonov. Cryptographic hardness of distribution-specific learning. In *Proceedings of the 25th Annual ACM Symposium on Theory of Computing*, pages 372–381, 1993.

[Kho02] Subhash Khot. On the power of unique 2-prover 1-round games. In *Proceedings of the 34th Annual ACM Symposium on Theory of Computing*, pages 767–775, 2002.

[Kho05] Subhash Khot. Inapproximability results via Long Code based PCPs. *ACM SIGACT News*, 36(2):25–42, 2005.

[Kho10a] Subhash Khot. Inapproximability of NP-complete problems, discrete Fourier analysis, and geometry. In *Proceedings of the International Congress of Mathematicians*, volume 901, pages 2676–2697, 2010.

[Kho10b] Subhash Khot. On the Unique Games Conjecture. In *Proceedings of the 25th Annual IEEE Conference on Computational Complexity*, pages 99–121, 2010.

[Kie69] Konrad Kiener. *Über Produkte von quadratisch integrierbaren Funktionen endlicher Vielfalt*. PhD thesis, Universität Innsbruck, 1969.

[Kin02] Guy Kindler. *Property Testing, PCP, and juntas*. PhD thesis, Tel Aviv University, 2002.

[KK07] Jeff Kahn and Gil Kalai. Thresholds and expectation thresholds. *Combinatorics, Probability and Computing*, 16(3):495–502, 2007.

[KKL88] Jeff Kahn, Gil Kalai, and Nathan Linial. The influence of variables on Boolean functions. In *Proceedings of the 29th Annual IEEE Symposium on Foundations of Computer Science*, pages 68–80, 1988.

[KKMO04] Subhash Khot, Guy Kindler, Elchanan Mossel, and Ryan O'Donnell. Optimal inapproximability results for MAX-CUT and other 2-variable CSPs? In *Proceedings of the 45th Annual IEEE Symposium on Foundations of Computer Science*, pages 146–154, 2004.

[KKMO07] Subhash Khot, Guy Kindler, Elchanan Mossel, and Ryan O'Donnell. Optimal inapproximability results for Max-Cut and other 2-variable CSPs? *SIAM Journal on Computing*, 37(1):319–357, 2007.

[Kle66] Daniel Kleitman. Families of non-disjoint subsets. *Journal of Combinatorial Theory*, 1(1):153–155, 1966.

[KLX10] Tali Kaufman, Simon Litsyn, and Ning Xie. Breaking the ϵ-soundness bound of the linearity test over GF(2). *SIAM Journal on Computing*, 39(5):1988–2003, 2010.

[KM93] Eyal Kushilevitz and Yishay Mansour. Learning decision trees using the Fourier spectrum. *SIAM Journal on Computing*, 22(6):1331–1348, 1993.

[KO06] Subhash Khot and Ryan O'Donnell. SDP gaps and UGC-hardness for Max-Cut-Gain. In *Proceedings of the 47th Annual IEEE Symposium on Foundations of Computer Science*, pages 217–226, 2006.

[KO12] Guy Kindler and Ryan O'Donnell. Gaussian noise sensitivity and Fourier tails. In *Proceedings of the 26th Annual IEEE Conference on Computational Complexity*, pages 137–147, 2012.

[KOS04] Adam Klivans, Ryan O'Donnell, and Rocco Servedio. Learning intersections and thresholds of halfspaces. *Journal of Computer and System Sciences*, 68(4):808–840, 2004.

[KOS08] Adam Klivans, Ryan O'Donnell, and Rocco Servedio. Learning geometric concepts via Gaussian surface area. In *Proceedings of the 49th Annual IEEE Symposium on Foundations of Computer Science*, pages 541–550, 2008.

[KOTZ13] Manuel Kauers, Ryan O'Donnell, Li-Yang Tan, and Yuan Zhou. Hypercontractive inequalities via SOS, with an application to Vertex-Cover. Manuscript, 2013.

[KP97] Matthias Krause and Pavel Pudlák. On the computational power of depth-2 circuits with threshold and modulo gates. *Theoretical Computer Science*, 174(1–2):137–156, 1997.

[KR82] Samuel Karlin and Yosef Rinott. Applications of ANOVA type decompositions for comparisons of conditional variance statistics including jackknife estimates. *Annals of Statistics*, 10(2):485–501, 1982.

[KR08] Subhash Khot and Oded Regev. Vertex Cover might be hard to approximate to within $2-\epsilon$. *Journal of Computer and System Sciences*, 74(3):335–349, 2008.

[Kra29] Mikahil (Krawtchouk) Kravchuk. Sur une généralisation des polynomes d'Hermite. *Comptes rendus de l'Académie des sciences*, 189:620–622, 1929.

[KS88] Wieslaw Krakowiak and Jerzy Szulga. Hypercontraction principle and random multilinear forms. *Probability Theory and Related Fields*, 77(3):325–342, 1988.

[KS02] Guy Kindler and Shmel Safra. Noise-resistant Boolean functions are juntas. Manuscript, 2002.

[KSTW01] Sanjeev Khanna, Madhu Sudan, Luca Trevisan, and David Williamson. The approximability of constraint satisfaction problems. *SIAM Journal on Computing*, 30(6):1863–1920, 2001.

[KV05] Subhash Khot and Nisheeth Vishnoi. The Unique Games Conjecture, integrality gap for cut problems and embeddability of negative type metrics into ℓ_1. In *Proceedings of the 46th Annual IEEE Symposium on Foundations of Computer Science*, pages 53–62, 2005.

[KW92] Stanisław Kwapień and Wojbor Woyczyński. *Random series and stochastic integrals: Single and multiple*. Probability and Its Applications. Birkhäuser, 1992.

[Kwa10] Stanisław Kwapień. On Hoeffding decomposition in l_p. *Illinois Journal of Mathematics*, 54(3):1205–1211, 2010.

[KZ97] Howard Karloff and Uri Zwick. A 7/8-approximation algorithm for MAX 3SAT? In *Proceedings of the 38th Annual IEEE Symposium on Foundations of Computer Science*, pages 406–415, 1997.

[Lap11] Pierre-Simon Laplace. Mémoire sur les intégrales définies et leur application aux probabilités, et spécialement à la recherche du milieu qu'il faut choisir entre les résultats des observations. *Mémoires de la Classe des Sciences Mathématiques et Physiques de l'Institut Impérial de France, Année 1810*, 58:279–347, 1811.

[Lec63] Robert Lechner. *Affine equivalence of switching functions*. PhD thesis, Harvard University, 1963.

[Lec71] Robert Lechner. Harmonic analysis of switching functions. In Amar Mukhophadhay, editor, *Recent developments in switching theory*, pages 121–228. Academic Press, 1971.

[Led92] Michel Ledoux. On an integral criterion for hypercontractivity of diffusion semigroups and extremal functions. *Journal of Functional Analysis*, 105(2):444–465, 1992.

[Led94] Michel Ledoux. Semigroup proofs of the isoperimetric inequality in Euclidean and Gauss space. *Bulletin des Sciences Mathématiques*, 118(6):485–510, 1994.

[Led96] Michel Ledoux. Isoperimetry and Gaussian analysis. In Pierre Bernard, editor, *Lectures on Probability Theory and Statistics*, volume XXIV of *Lecture Notes in Mathematics 1648*, pages 165–294. Springer, 1996.

[Led98] Michel Ledoux. A short proof of the Gaussian isoperimetric inequality. In *High dimensional probability (Oberwolfach, 1996)*, volume 43 of *Progress in Probability*, pages 229–232. Birkhäuser, Basel, 1998.

[Lee10] Homin Lee. Decision trees and influence: an inductive proof of the OSSS Inequality. *Theory of Computing*, 6(1):81–84, 2010.

[Leo12] Nikos Leonardos. An improved lower bound for the randomized decision tree complexity of recursive majority. Technical Report TR12-099, Electronic Colloquium on Computational Complexity, 2012.

[Lév22] Paul Lévy. *Le cons d'Analyse Fonctionnelle*. Gauthier-Villars, 1922.

[Lin22] Jarl Lindeberg. Eine neue Herleitung des Exponentialgesetzes in der Wahrscheinlichkeitsrechnung. *Mathematische Zeitschrift*, 15(1):211–225, 1922.

[LLS06] Sophie Laplante, Troy Lee, and Mario Szegedy. The quantum adversary method and classical formula size lower bounds. *Computational Complexity*, 15(2):163–196, 2006.

[LMN89] Nathan Linial, Yishay Mansour, and Noam Nisan. Constant depth circuits, Fourier transform and Learnability. In *Proceedings of the 30th Annual IEEE Symposium on Foundations of Computer Science*, pages 574–579, 1989.

[LMN93] Nathan Linial, Yishay Mansour, and Noam Nisan. Constant depth circuits, Fourier transform and learnability. *Journal of the ACM*, 40(3):607–620, 1993.

[LO94] Rafał Latała and Krzysztof Oleszkiewicz. On the best constant in the Khintchine–Kahane inequality. *Studia Mathematica*, 109(1):101–104, 1994.

[Lov08] Shachar Lovett. Unconditional pseudorandom generators for low degree polynomials. In *Proceedings of the 40th Annual ACM Symposium on Theory of Computing*, pages 557–562, 2008.

[LSP82] Leslie Lamport, Robert Shostak, and Marshall Pease. The Byzantine generals problem. *ACM Transactions on Programming Languages and Systems*, 4(3):382–401, 1982.

[LT09] Shachar Lovett and Yoav Tzur. Explicit lower bound for fooling polynomials by the sum of small-bias generators. In *Electronic Colloquium on Computational Complexity TR09-088*, 2009.

[LVW93] Michael Luby, Boban Veličković, and Avi Wigderson. Deterministic approximate counting of depth-2 circuits. In *Proceedings of the 2nd Annual Israel Symposium on Theory of Computing Systems*, pages 18–24, 1993.

[Man94] Yishay Mansour. Learning Boolean functions via the Fourier Transform. In Vwani Roychowdhury, Kai-Yeung Siu, and Alon Orlitsky, editors, *Theoretical Advances in Neural Computation and Learning*, chapter 11, pages 391–424. Kluwer Academic Publishers, 1994.

[Man95] Yishay Mansour. An $O(n^{\log\log n})$ learning algorithm for DNF under the uniform distribution. *Journal of Computer and System Sciences*, 50(3):543–550, 1995.

[Mar74] Grigory Margulis. Probabilistic characteristics of graphs with large connectivity. *Problemy Peredači Informacii*, 10(2):101–108, 1974.

[May52] Kenneth May. A set of independent necessary and sufficient conditions for simple majority decisions. *Econometrica*, 20(4):680–684, 1952.

[McK73] Henry McKean. Geometry of differential space. *Annals of Probability*, 1(2):197–206, 1973.

[Meh66] F. Gustav Mehler. Ueber die Entwicklung einer Function von beliebig vielen Variablen nach *Laplace*schen Functionen höherer ordnung. *Journal für die reine und angewandte Mathematik*, 66:161–176, 1866.

[Mid04] Gatis Midrijānis. Exact quantum query complexity for total Boolean functions. arXiv:quant-ph/0403168, 2004.

[Mir13] Michele Miranda Jr. Personal communication to the author. October 2013.

[MN12] Elchanan Mossel and Joe Neeman. Robust optimality of Gaussian noise stability. Technical Report 1210.4126, arXiv, 2012.

[MNP12] Michele Miranda Jr., Matteo Novaga, and Diego Pallara. An introduction to BV functions in Wiener spaces. Technical Report 1212.5926, arXiv, 2012.

[MNSX11] Frédéric Magniez, Ashwin Nayak, Miklos Santha, and David Xiao. Improved bounds for the randomized decision tree complexity of recursive majority. In *Proceedings of the 38th Annual International Colloquium on Automata, Languages and Programming*, pages 317–329, 2011.

[MO05] Elchanan Mossel and Ryan O'Donnell. Coin flipping from a cosmic source: On error correction of truly random bits. *Random Structures & Algorithms*, 26(4):418–436, 2005.

[MOO05a] Elchanan Mossel, Ryan O'Donnell, and Krzysztof Oleszkiewicz. Noise stability of functions with low influences: invariance and optimality. In *Proceedings of the 46th Annual IEEE Symposium on Foundations of Computer Science*, pages 21–30, 2005.

[MOO05b] Elchanan Mossel, Ryan O'Donnell, and Krzysztof Oleszkiewicz. Noise stability of functions with low influences: invariance and optimality. Technical Report math/0503503, arXiv, 2005.

[MOO10] Elchanan Mossel, Ryan O'Donnell, and Krzysztof Oleszkiewicz. Noise stability of functions with low influences: invariance and optimality. *Annals of Mathematics*, 171(1), 2010.

[MOR+06] Elchanan Mossel, Ryan O'Donnell, Oded Regev, Jeffrey Steif, and Benjamin Sudakov. Non-interactive correlation distillation, inhomogeneous Markov chains, and the reverse Bonami–Beckner inequality. *Israel Journal of Mathematics*, 154:299–336, 2006.

[MORS10] Kevin Matulef, Ryan O'Donnell, Ronitt Rubinfeld, and Rocco Servedio. Testing halfspaces. *SIAM Journal on Computing*, 39(5):2004–2047, 2010.

[MOS04] Elchanan Mossel, Ryan O'Donnell, and Rocco Servedio. Learning functions of k relevant variables. *Journal of Computer and System Sciences*, 69(3):421–434, 2004.

[Mos10] Elchanan Mossel. Gaussian bounds for noise correlation of functions. *Geometric and Functional Analysis*, 19(6):1713–1756, 2010.

[MOS12] Elchanan Mossel, Krzysztof Oleszkiewicz, and Arnab Sen. On reverse hypercontractivity. Technical Report 1108.1210, arXiv, 2012.

[MP11] Gretchen Matthews and Justin Peachey. Small-bias sets from extended norm-trace codes. Manuscript, 2011.

[MPPP07] Michele Miranda Jr., Diego Pallara, Fabio Paronetto, and Marc Preunkert. Short-time heat flow and functions of bounded variation in $\mathbf{R}^N$. *Annales de la Faculté des Sciences de Toulouse. Mathématiques. Série 6*, 16(1):125–145, 2007.

[MRRW77] Robert McEliece, Eugene Rodemich, Howard Rumsey, and Lloyd Welch. New upper bounds on the rate of a code via the Delsarte–MacWilliams inequalities. *IEEE Transactions on Information Theory*, 23(2):157–166, 1977.

[MS73] Tamás Matolcsi and József Szücs. Intersection des mesures spectrales conjuguées. *Comptes rendus de l'Académie des sciences*, 277:841–843, 1973.

[MS77] F. Jessie MacWilliams and Neil Sloane. *The theory of error-correcting codes*. North-Holland Publishing Co., 1977.

[Mul54a] David Muller. Application of Boolean algebra to switching circuit design and to error detection. *IRE Transactions on Electronic Computers*, 3(6):6–12, 1954.

[Mul54b] David Muller. Boolean algebras in electric circuit design. *The American Mathematical Monthly*, 61(7):27–28, 1954.

[Mül05] Paul Müller. *Isomorphisms between H^1 spaces*, volume 66 of *Monografie Matematyczne*. Birkhäuser Verlag, 2005.

[Nak35] Akira Nakashima. The theory of relay circuit composition. *The Journal of the Institute of Telegraph and Telephone Engineers of Japan*, 150:731–752, September 1935.

[Naz03] Fedor Nazarov. On the maximal perimeter of a convex set in $\mathbb{R}^n$ with respect to a Gaussian measure. In *Geometric Aspects of Functional Analysis*, volume 1807, pages 169–187. Israel Seminar, 2003.

[Nel66] Edward Nelson. A quartic interaction in two dimensions. In *Mathematical Theory of Elementary Particles*, pages 69–73, Cambridge, MA, 1966. M.I.T. Press.

[Nel73] Edward Nelson. The free Markoff field. *Journal of Functional Analysis*, 12:211–227, 1973.

[Nev76] Jacques Neveu. Sur l'espérance conditionnelle par rapport à un mouvement brownien. *Annales de l'Institut Henri Poincaré (B)*, 12(2):105–109, 1976.

[Nin58] Ichizo Ninomiya. A theory of the coordinate representations of switching functions. *Memoirs of the Faculty of Engineering, Nagoya University*, 10:175–190, 1958.

[NN93] Joseph Naor and Moni Naor. Small-bias probability spaces: efficient constructions and applications. *SIAM Journal on Computing*, 22(4):838–856, 1993.

[NP00] Fedor Nazarov and Anatoliy Podkorytov. Ball, Haagerup, and distribution functions. *Complex Analysis, Operators, and Related Topics. Operator Theory: Advances and Applications*, 113:247–267, 2000.

[NS94] Noam Nisan and Mario Szegedy. On the degree of Boolean functions as real polynomials. *Computational Complexity*, 4(4):301–313, 1994.

[NSV02] Fedor Nazarov, Mikhail Sodin, and Alexander Vol'berg. The geometric Kannan–Lovász–Simonovits lemma, dimension-free estimates for volumes of sublevel sets of polynomials, and distribution of zeros of random analytic functions. *Algebra i Analiz*, 14(2):214–234, 2002.

[NW95] Noam Nisan and Avi Wigderson. On rank vs. communication complexity. *Combinatorica*, 15(4):557–565, 1995.

[O'D03] Ryan O'Donnell. *Computational applications of noise sensitivity*. PhD thesis, Massachusetts Institute of Technology, 2003.

[O'D04] Ryan O'Donnell. Hardness amplification within NP. *Journal of Computer and System Sciences*, 69(1):68–94, 2004.

[Ole03] Krzysztof Oleszkiewicz. On a nonsymmetric version of the Khinchine–Kahane inequality. In Evariste Giné, Christian Houdré, and David Nualart, editors, *Stochastic inequalities and applications*, volume 56, pages 157–168. Birkhäuser, 2003.

[OS06] Ryan O'Donnell and Rocco Servedio. Learning monotone decision trees in polynomial time. In *Proceedings of the 21st Annual IEEE Conference on Computational Complexity*, pages 213–225, 2006.

[OS07] R. O'Donnell and R. Servedio. Learning monotone decision trees in polynomial time. *SIAM J. Comput.*, 37(3):827–844, 2007.

[OS08a] Ryan O'Donnell and Rocco Servedio. Extremal properties of polynomial threshold functions. *Journal of Computer and System Sciences*, 74(3):298–312, 2008.

[OS08b] Ryan O'Donnell and Rocco Servedio. Learning monotone decision trees in polynomial time. *SIAM Journal on Computing*, 37(3):827–844, 2008.

[OSSS05] Ryan O'Donnell, Michael Saks, Oded Schramm, and Rocco Servedio. Every decision tree has an influential variable. In *Proceedings of the 46th Annual IEEE Symposium on Foundations of Computer Science*, pages 31–39, 2005.

[OW08] Ryan O'Donnell and Yi Wu. An optimal SDP algorithm for Max-Cut, and equally optimal Long Code tests. In *Proceedings of the 40th Annual ACM Symposium on Theory of Computing*, pages 335–344, 2008.

[OW09] Ryan O'Donnell and Yi Wu. 3-Bit dictator testing: 1 vs. 5/8. In *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 365–373, 2009.

[OW12] Ryan O'Donnell and John Wright. A new point of NP-hardness for Unique-Games. In *Proceedings of the 44th Annual ACM Symposium on Theory of Computing*, pages 289–306, 2012.

[OW13] Ryan O'Donnell and Karl Wimmer. Sharpness of KKL on Schreier graphs. *Electronic Communications in Probability*, 18:1–12, 2013.

[Pal32] Raymond Paley. A remarkable series of orthogonal functions (I). *Proceedings of the London Mathematical Society*, 2(1):241–264, 1932.

[Pen46] Lionel Penrose. The elementary statistics of majority voting. *Journal of the Royal Statistical Society*, 109(1):53–57, 1946.

[Per90] René Peralta. On the randomness complexity of algorithms. Technical Report 90-1, University of Wisconsin, Milwaukee, 1990.

[Per04] Yuval Peres. Noise stability of weighted majority. arXiv:math/0412377, 2004.

[Pis86] Gilles Pisier. Probabilistic methods in the geometry of Banach spaces. In *Probability and analysis (Varenna, 1985)*, volume 1206 of *Lecture Notes in Mathematics*, pages 167–241. Springer, Berlin, 1986.

[PRS01] Michael Parnas, Dana Ron, and Alex Samorodnitsky. Proclaiming dictators and juntas or testing Boolean formulae. In *Proceedings of the 5th Annual International Workshop on Randomized Techniques in Computation*, pages 273–284, 2001.

[PRS02] Michal Parnas, Dana Ron, and Alex Samorodnitsky. Testing basic Boolean formulae. *SIAM Journal on Discrete Mathematics*, 16(1):20–46, 2002.

[PZ78] Gilles Pisier and Joel Zinn. On the limit theorems for random variables with values in the spaces l_p $(2 \leq p < \infty)$. *Zeitschrift für Wahrscheinlichkeitstheorie und Verwandte Gebiete*, 41(4):289–304, 1978.

[Rag08] Prasad Raghavendra. Optimal algorithms and inapproximability results for every CSP? In *Proceedings of the 40th Annual ACM Symposium on Theory of Computing*, pages 245–254, 2008.

[Rag09] Prasad Raghavendra. *Approximating NP-hard problems: efficient algorithms and their limits*. PhD thesis, University of Washington, 2009.

[Rao47] Calyampudi Rao. Factorial experiments derivable from combinatorial arrangements of arrays. *Journal of the Royal Statistical Society*, 9(1):128–139, 1947.

[Raz93] Alexander Razborov. Bounded arithmetic and lower bounds in boolean complexity. In Peter Clote and Jeffrey Remmel, editors, *Feasible Mathematics II*, pages 344–386. Birkhäuser, 1993.

[Rik61] William Riker. Voting and the summation of preferences: An interpretive bibliographic review of selected developments during the last decade. *The American Political Science Review*, 55(4):900–911, 1961.

[Ros76] Haskell Rosenthal. Convolution by a biased coin. In *The Altgeld Book 1975/1976*, pages II.1–II.17. University of Illinois, 1976.

[Ros06] Raphaël Rossignol. Threshold for monotone symmetric properties through a logarithmic Sobolev inequality. *Annals of Probability*, 34(5):1707–1725, 2006.

[Rot53] Klaus Roth. On certain sets of integers. *Journal of the London Mathematical Society*, 28(1):104–109, 1953.

[Rot73] Vladimir Rotar'. Some limit theorems for polynomials of second order. *Teoriya Veroyatnostei i ee Primeneniya*, 18(3):527–534, 1973.

[Rot74] Vladimir Rotar'. Some limit theorems for polynomials of second degree. *Theory of Probability and its Applications*, 18(3):499–507, 1974.

[Rot75] Vladimir Rotar'. Limit theorems for multilinear forms and quasipolynomial functions. *Teoriya Veroyatnostei i ee Primeneniya*, 20(3):527–546, 1975.

[Rot76] Oscar Rothaus. On "bent" functions. *Journal of Combinatorial Theory, Series A*, 20(3):300–305, 1976.

[Rot79] Vladimir Rotar'. Limit theorems for polylinear forms. *Journal of Multivariate Analysis*, 9(4):511–530, 1979.

[Rot88] Alvin Roth, editor. *The Shapley value: essays in honor of Lloyd S. Shapley*. Cambridge University Press, 1988.

[Rou62] Jean-Jacques Rousseau. *Du Contrat Social*. Marc-Michel Rey, 1762.

[RR01] Yosef Rinott and Vladimir Rotar'. A remark on quadrant normal probabilities in high dimensions. *Statistics & Probability Letters*, 51(1):47–51, 2001.

[RS96] Ronitt Rubinfeld and Madhu Sudan. Robust characterizations of polynomials with applications to program testing. *SIAM Journal on Computing*, 25(2):252–271, 1996.

[Rud62] Walter Rudin. *Fourier analysis on groups*. John Wiley & Sons, 1962.

[Rus81] Lucio Russo. On the critical percolation probabilities. *Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete*, 56(2):229–237, 1981.

[Rus82] Lucio Russo. An approximate zero-one law. *Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete*, 61(1):129–139, 1982.

[RV80] Herman Rubin and Richard Vitale. Asymptotic distribution of symmetric statistics. *Annals of Statistics*, 8(1):165–170, 1980.

[Sae68] Sadahiro Saeki. On norms of idempotent measures. *Proceedings of the American Mathematical Society*, 19(3):600–602, 1968.

[SB91] Kai-Yeung Siu and Jehoshua Bruck. On the power of threshold circuits with small weights. *SIAM Journal on Discrete Mathematics*, 4(3):423–435, 1991.

[Sch48] Erhard Schmidt. Die Brunn-Minkowskische Ungleichung und ihr Spiegelbild sowie die isoperimetrische Eigenschaft der Kugel in der euklidischen und nichteuklidischen Geometrie. I. *Mathematische Nachrichten*, 1:81–157, 1948.

[Sch67] Michel Schreiber. Fermeture en probabilité des chaos de Wiener. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, Séries A*, 265:859–861, 1967.

[Sch69] Michel Schreiber. Fermeture en probabilité de certains sous-espaces d'un espace L^2. Application aux chaos de Wiener. *Zeitschrift für Wahrscheinlichkeitstheorie und Verwandte Gebiete*, 14:36–48, 1969.

[Seg70] Irving Segal. Construction of non-linear local quantum processes: I. *Annals of Mathematics*, 92:462–481, 1970.

[Sha37] Claude Shannon. A symbolic analysis of relay and switching circuits. Master's thesis, Massachusetts Institute of Technology, 1937.

[Sha53] Lloyd Shapley. A value for n-person games. In Harold Kuhn and Albert Tucker, editors, *Contributions in the Theory of Games, volume II*, pages 307–317. Princeton University Press, 1953.

[She99] William Sheppard. On the application of the theory of error to cases of normal distribution and normal correlation. *Philosophical Transactions of the Royal Society of London, Series A*, 192:101–167, 531, 1899.

[She38] Victor Shestakov. *Some Mathematical Methods for the Construction and Simplification of Two-Terminal Electrical Networks of Class A*. PhD thesis, Lomonosov State University, 1938.

[She08] Jonah Sherman. The randomized decision tree complexity of the recursive majority of three function on 3^n inputs is at least 2.5^n. Unpublished, 2008.

[She13] Irina Shevtsova. On the absolute constants in the Berry–Esseen inequality and its structural and nonuniform improvements. *Informatika i Ee Primeneniya*, 7(1):124–125, 2013.

[SHK72] Barry Simon and Raphael Høegh-Krohn. Hypercontractive semigroups and two dimensional self-coupled Bose fields. *Journal of Functional Analysis*, 9:121–180, 1972.

[Sie84] Thomas Siegenthaler. Correlation-immunity of nonlinear combining functions for cryptographic applications. *IEEE Transactions on Information Theory*, 30(5):776–780, 1984.

[SS10] Oded Schramm and Jeffrey Steif. Quantitative noise sensitivity and exceptional times for percolation. *Annals of Mathematics*, 171(2):619–672, 2010.

[ST78] Vladimir Sudakov and Boris Tsirel'son. Extremal properties of half-spaces for spherically invariant measures. *Journal of Soviet Mathematics*, 9(1):9–18, 1978. Originally published in *Zap. Nauchn. Sem. Leningrad. Otdel. Math. Inst. Steklova.*, 41:14–21, 1974.

[Ste72] Charles Stein. A bound for the error in the normal approximation to the distribution of a sum of dependent random variables. In *Proceedings of the 6th Berkeley Symposium on Mathematical Statistics and Probability*, pages 583–602. University of California Press, 1972.

[Ste86a] J. Michael Steele. An Efron–Stein inequality for nonsymmetric statistics. *Annals of Statistics*, 14(2):753–758, 1986.

[Ste86b] Charles Stein. *Approximate computation of expectations*. Institute of Mathematical Statistics Lecture Notes. Institute of Mathematical Statistics, Hayward, CA, 1986.

[Sto10] Andrew Stothers. *On the complexity of matrix multiplication*. PhD thesis, University of Edinburgh, 2010.

[Sub61] Bella Subbotovskaya. Realizations of linear functions by formulas using $\vee$, &, -. *Doklady Akademii Nauk SSSR*, 136(3):553–555, 1961.

[SW86] Michael Saks and Avi Wigderson. Probabilistic Boolean decision trees and the complexity of evaluating game trees. In *Proceedings of the 27th Annual IEEE Symposium on Foundations of Computer Science*, pages 29–38, 1986.

[Szu98] Jerzy Szulga. *Introduction to random chaos*. Chapman & Hall, 1998.

[Tak83] Akimichi Takemura. Tensor analysis of ANOVA decomposition. *Journal of the American Statistical Association*, 78(384):894–900, 1983.

[Tal] Michel Talagrand. http://www.math.jussieu.fr/~talagran/prizes/convolution.pdf.

[Tal89] Michel Talagrand. A conjecture on convolution operators, and a non-Dunford–Pettis operator on L^1. *Israel Journal of Mathematics*, 68(1):82–88, 1989.

[Tal93] Michel Talagrand. Isoperimetry, logarithmic Sobolev inequalities on the discrete cube and Margulis' graph connectivity theorem. *Geometric And Functional Analysis*, 3(3):298–314, 1993.

[Tal94] Michel Talagrand. On Russo's approximate zero-one law. *Annals of Probability*, 22(3):1576–1587, 1994.

[Tal96] Michel Talagrand. How much are increasing sets positively correlated? *Combinatorica*, 16(2):243–258, 1996.

[Tan61] Meyer Tannenbaum. The establishment of a unique representation for a linearly separable function. Technical report, Lockheed Missiles and Space Company, 1961. Threshold Switching Techniques, 20:1–5.

[Tar89] Gábor Tardos. Query complexity, or why is it difficult to separate $\mathsf{NP}^A \cap \mathsf{coNP}^A$ from P^A by random oracles? *Combinatorica*, 9(4):385–392, 1989.

[Ter99] Audrey Terras. *Fourier Analysis on Finite Groups and Applications*. Cambridge University Press, 1999.

[Tho87] Andrew Thomason. Pseudo-random graphs. *Annals of Discrete Mathematics*, 144:307–331, 1987.

[Tit62] Robert Titsworth. *Correlation properties of cyclic sequences*. PhD thesis, California Institute of Technology, 1962.

[Tit63] Robert Titsworth. Optimal ranging codes. Technical Report 32-411, Jet Propulsion Laboratory, 1963.

[Tro58] Hale Trotter. Approximation of semi-groups of operators. *Pacific Journal of Mathematics*, 8:887–919, 1958.

[TSSW00] Luca Trevisan, Gregory Sorkin, Madhu Sudan, and David Williamson. Gadgets, approximation, and linear programming. *SIAM Journal on Computing*, 29(6):2074–2097, 2000.

[TZ00] Jean-Pierre Tillich and Gilles Zémor. Discrete isoperimetric inequalities and the probability of a decoding error. *Combinatorics, Probability and Computing*, 9(5), 2000.

[UO30] George Uhlenbeck and Leonard Ornstein. On the theory of the Brownian motion. *Physical Review*, 36(5):823–841, 1930.

[Val84] Leslie Valiant. A theory of the learnable. *Communications of the ACM*, 27(11):1134–1142, 1984.

[Val12] Gregory Valiant. Finding correlations in subquadratic time, with applications to learning parities and juntas with noise. Technical Report TR12-006, Electronic Colloquium on Computational Complexity, 2012.

[Vas12] Virginia Vassilevska Williams. Multiplying matrices faster than Coppersmith–Winograd. In *Proceedings of the 44th Annual ACM Symposium on Theory of Computing*, pages 887–898, 2012.

[Vil47] Naum Vilenkin. On a class of complete orthonormal systems. *Izvestiya Rossiiskoi Akademii Nauk, Seriya Matematicheskaya*, 11(4):363–400, 1947.

[Vio09] Emanuele Viola. Correlation bounds for polynomials over $\{0,1\}$. *SIGACT News*, 40(1):27–44, 2009.

[Vit84] Richard Vitale. An expansion for symmetric statistics and the Efron–Stein inequality. In *Inequalities in Statistics and Probability*, volume 5 of *Lecture Notes—Monograph Series*, pages 112–114. Institute of Mathematical Statistics, 1984.

[vM47] Richard von Mises. On the asymptotic distribution of differentiable statistical functions. *Annals of Mathematical Statistics*, 18(3):309–348, 1947.

[Wal23] Joseph Walsh. A closed set of normal orthogonal functions. *American Journal of Mathematics*, 45(1):5–24, 1923.

[Wei79] Fred Weissler. Two-point inequalities, the Hermite semigroup, and the Gauss–Weierstrass semigroup. *Journal of Functional Analysis*, 32(1):102–121, 1979.

[Wei80] Fred Weissler. Logarithmic Sobolev inequalities and hypercontractive estimates on the circle. *Journal of Functional Analysis*, 37(2):218–234, 1980.

[Wol07] Paweł Wolff. Hypercontractivity of simple random variables. *Studia Mathematica*, 180(3):219–236, 2007.

[XM88] Guozhen Xiao and James Massey. A spectral characterization of correlation-immune combining functions. *IEEE Transactions on Information Theory*, 34(3):569–571, 1988.

[Yan04] Ke Yang. On the (im)possibility of non-interactive correlation distillation. In *Proceedings of the 6th Annual Latin American Informatics Symposium*, pages 222–231, 2004.

[Yao77] Andrew Yao. Probabilistic computations: Towards a unified measure of complexity. In *Proceedings of the 9th Annual ACM Symposium on Theory of Computing*, pages 222–227, 1977.

[Yao85] Andrew Yao. Separating the polynomial time hierarchy by oracles. In *Proceedings of the 26th Annual IEEE Symposium on Foundations of Computer Science*, pages 1–10, 1985.

[Zhe27] Ivan Zhegalkin. On a technique of calculating propositions in symbolic logic. *Matematicheskii Sbornik*, 43:9–28, 1927.

[Zue89] Yuri Zuev. Asymptotics of the logarithm of the number of threshold functions of the algebra of logic. *Doklady Akademii Nauk SSSR*, 39(3):512–513, 1989.

[Zwi99] Uri Zwick. Outward rotations: A tool for rounding solutions of semidefinite programming relaxations, with applications to MAX CUT and other problems. In *Proceedings of the 31st Annual ACM Symposium on Theory of Computing*, pages 679–687, 1999.

[Zwi02] Uri Zwick. Computer assisted proof of optimal approximability results. In *Proceedings of the 13th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 496–505, 2002.