

CURRICULUM VITAE

Name: Amir Dembo
Date and place of birth: 10/25/58, Haifa, Israel
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Updated: June 2011

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ACADEMIC DEGREES

- 1) Ph.D., Electrical Engineering, Technion, Haifa, Israel (1986)
- 2) B.Sc, Electrical Engineering, Technion, Haifa, Israel (1980) (Summa Cum Laude)

ACADEMIC APPOINTMENTS

- 1) 9/06 - 8/10 Courtesy Professor, Electrical Engineering, Stanford University.
- 2) 5/01 Full Professor, Mathematics and Statistics Departments, Stanford University.
- 3) 10/96 - 5/01 Associate Professor, Mathematics and Statistics Departments, Stanford University.
- 4) 9/94 - 7/96 Associate & Full Professor, Department of Electrical Engineering, Technion.
- 5) 10/90 - 7/96 Assistant Professor, Mathematics and Statistics Departments, Stanford University.
- 6) 9/92 - 12/92 Visiting Assistant Professor, Statistics department, UC Berkeley.
- 7) 10/89 - 9/90 Acting Assistant Professor, Mathematics and Statistics Departments, Stanford University.
- 8) 11/87 - 9/89 Research Associate, Information Systems Laboratory, Stanford University.
- 9) 10/86 - 10/87 Visiting Assistant Professor (Research), Division of Applied Mathematics, Brown University.

TEACHING, STANFORD UNIVERSITY, 1996-2010.

- 1) Undergraduate courses: Multivariate Calculus, Ordinary Differential Equations, Theory of Probability, Discrete Probabilistic Methods, Linear Algebra, Financial Mathematics.
- 2) Graduate courses: Stochastic Processes, Large Deviations, Random Matrices, Probability with measure theory, Gibbs Measures, Stochastic processes on graphs, Concentration Inequalities, Probability on Trees, Sample path properties of Brownian motion.

SELECTED INVITED LECTURES, 2001-2011.

- 1) Inst. Theo. Physics program on biological information, Santa-Barbara/California, Jan. 2001.
- 2) Graduate research winter school, Berlin/Germany, March 2001.
- 3) Short course, Institut Henri Poincare, semester on statistics, Paris/France, May 2001.
- 4) AMS/SNF 1st International Meeting, Lyon/France, July 2001.
- 5) Workshop on Random Matrices, Oberwolfach/Germany, March 2002.
- 6) 24th Midwest Probability Colloquium, Chicago, October 2002.
- 7) South California Probability day, Los-Angeles, December 2002.
- 8) St. Flour Probability summer school, July 2003.
- 12) 12th Applied Probability day, NY, May 2004.
- 13) Workshop on Stochastic Dynamics, Oberwolfach/Germany, August, 2004.

- 14) Workshop on Metastability, Aging and Anomalous Diffusion, Leipzig/Germany, May, 2005.
- 15) Hypathie seminar on Statistical Physics of Complex Systems, Lyon/France, May, 2005.
- 16) Special invited IMS Medallion lecture, Minneapolis/Minnesota, August 2005.
- 17) Sequence Analysis towards System Biology, IPAM, Los-Angeles, Jan. 2006.
- 18) Seminar on Stochastic Processes, Princeton, March 2006.
- 19) International Congress of Mathematics, Madrid/Spain, August 2006.
- 20) Workshop on message passing, Inf. Th. and Appl., San-Diego, Feb. 2007.
- 21) 2nd Graduate student conference in probability, Madison, May 2008.
- 22) Workshop on stochastic analysis, Oberwolfach/Germany, June, 2008.
- 23) Mini course, 12th Brazilian school of probability, Ouro Preto, Aug. 2008.
- 24) Working group on message-passing algorithms, Dimacs/NJ, Oct. 2008.
- 25) Interplay of Probability and Analysis, Oberwolfach/Germany, Dec. 2008.
- 26) Statistical mechanics workshop, Inst. Henri Poinc., Paris/France, Dec. 2008.
- 27) Workshop on disordered systems: spin glasses, CRM, Montreal, June 2009.
- 28) Levy lecturer, 33rd conf. on Stochastic Processes & Appl., Berlin, July 2009.
- 29) Statistical Mechanics on Random Structures, workshop, BIRS/Banff, Nov 2009.
- 30) Free Probability and Large N Limit, II, workshop, UCLA, Feb 2010.
- 31) 4th Cayuga Triangle Probability Seminar, Cornell/Ithaca, Apr. 2010.
- 32) Program on random matrices, MSRI, Oct. 2010.
- 33) Probabilistic Techniques in Statistical Mechanics, Berlin, Oct. 2010.
- 34) Probability Theory, Statistical Physics and Applications, Abu Dhabi, Jan. 2011.
- 35) Program on Dynamics and Transport in Disordered Systems, Fields Institute, Toronto, Feb. 2011.
- 36) 4th LaPietra week in Probability, Florence, June 2011.

SCHOLARSHIPS AND RESEARCH GRANTS, 1994-2010.

- 1) 1994 & 1997 & 2000 & 2004 & 2007 & 2010 NSF research grants (Statistics and Probability program).
- 2) 2008 NSF (Probability program) grant for the 2009 seminar in stochastic processes conference at Stanford.
- 3) 2005 NSF VIGRE program in Statistics at Stanford.
- 4) 2004 NSF (Analysis program) & Clay grant for a conference in Harmonic Analysis, Ergodic Theory and Probability.
- 5) 2003 NSF ITR grant in signal processing (jointly with S. Verdu and T. Weissman).
- 6) 2003 NSF Focused Research Group (jointly with D. Aldous, Y. Peres and A. Sinclair).
- 7) 2002 Lady Davis Visiting Professorship.
- 8) 1995 & 1999 US-Israel BSF research grant (jointly with O. Zeitouni, S. Karlin (95), D. Stroock (95), J. Rosen (99) and Y. Peres (99)).

GRADUATE STUDENTS

- 1) Nobel, Andrew - Ph.D., June 1992. Thesis topic: On uniform law of averages.
- 2) Zajic, Tim - Ph.D., December 1993. Thesis topic: Large deviations for sample path processes and applications.
- 3) Lev, Ido - M.Sc., April 1996 (Technion, Israel). Thesis topic: Universal signal enhancement by coding.
- 4) Kontoyiannis, Ioannis - Ph.D., June 1998. Thesis topic: Recurrence and waiting times in stationary processes.
- 5) Jiang, Tiefeng - Ph.D., June 1999. Thesis topic: Maxima of partial sums indexed by geometric structures.

- 6) Yevgeniy Kovchegov - Ph.D., June 2002. Thesis topic: Brownian bridge, Percolation and related processes.
- 7) Scott Sheffield - Ph.D., April 2003. Thesis topic: Random surfaces: large deviations principles and gradient Gibbs measure classifications.
- 8) Johan Lim - Ph.D., June 2003. Thesis topic: Hidden variable models and their applications.
- 9) Dimitrios Cheliotis - Ph.D., June 2004. Thesis topic: Diffusion in random environment and the renewal theorem.
- 10) Olivier Daviaud - Ph.D., June 2004. Thesis topic: Brownian motion, Cauchy process, and the Gaussian free field.
- 11) Manuel Zamfir - Ph.D., June 2008. Thesis topic: Limiting dynamics for spherical models of spin glasses.
- 12) Kamil Szczegot - Ph.D., June 2009. Thesis topic: Sharp approximation for density dependent Markov chains.
- 13) Jason Miller - Ph.D., June 2011. Thesis topic: Limit theorems for Ginzburg-Landau $\nabla\phi$ random surfaces.
- 14) Mykhaylo Shkolnikov - Ph.D., December 2011. Thesis topic: Competing particle systems and their applications.
- 15) Anirban Basak - Ph.D., June 2014 (expected). Thesis topic: TBD.
- 16) Nike Sun - Ph.D., June 2015 (expected). Thesis topic: TBD.

Fellow: Institute of Mathematical Statistics. Member: IMS Committee on Nominations 1998, 2002; on Editors 2007; NSF Postdoctoral fellowships 2002-2004.

ASSOCIATE EDITOR: 1994-2000: Annals of Probability; 1999-2002: Electronic Journal in Probability; 2000-2002: Annals of Applied Probability; 2005-2010: Probability Theory and Related Fields. EDITOR: Probability Theory and Related Fields; 2010-.

PUBLICATIONS

Books

- 1) A. Dembo and O. Zeitouni, *Large Deviations Techniques and Applications*, Jones and Bartlett, Boston, 1993; Second edition, Springer, New York, 1998.
- 2) A. Dembo "High Density Associative Memories", contributed chapter in the book *Associative Neural Memories: Theory and Implementation*, M. H. Hassoun, editor, Oxford University Press, New York, NY, 1993.
- 3) A. Dembo and O. Zeitouni, "Large Deviations and Applications", contributed chapter in the *Handbook of Stochastic Analysis and Applications*, D. Kannan and Lakshmikantham, editors, Marcel Dekker, 2002.
- 4) A. Dembo "Favorite points, cover times and fractals", 33rd St. Flour probability summer school, in *Lecture Notes in Mathematics, 1869*, Springer, 2005.

Papers Published in Refereed Journals

- 1) Dembo, A. and Malah, D., "Generalization of the window method for FIR digital filter design," IEEE Trans. ASSP, 32 (1984), pp. 1081-1083.
- 2) Dembo, A. and Malah, D., "WMMSE design of digital filter banks with specified composite response," IEEE Trans. ASSP, 34 (1986), pp. 1529-1541. (This paper is based on the results of the thesis).
- 3) Dembo, A., "The relation between maximum likelihood estimation of structured covariance matrices and Periodograms", IEEE Trans. ASSP, 34 (1986), pp. 1661.

- 4) Dembo, A. and Zeitouni, O., "Parameter estimation of continuous time stochastic processes via the EM algorithm", *Stochastic Processes and their Applications*, 23 (1986), pp. 91-113. Erratum, 40(1992) pp. 359-361.
- 5) Zeitouni, O. and Dembo, A., "A maximum a-posteriori estimator for trajectories of diffusion processes", *Stochastics*, 20 (1987), pp. 211-246. Erratum, pp. 341.
- 6) Dembo, A. and Zeitouni, O., "On the parameter estimation of continuous time ARMA processes from noisy observations", *IEEE Trans. Auto. Con.*, 32 (1987), pp. 361-364.
- 7) Dembo, A. and Malah, D., "The design of optimal uniform filter banks With specified composite response," *IEEE Trans. ASSP*, 35 (1987), pp. 807-817. (This paper is based on the results of the thesis).
- 8) Bachmann, C.M., Cooper, L.N., Dembo, A. and Zeitouni, O., "A relaxation model for memory with high storage density", *Proc. Natl. Academy of Science USA*, 84 (1987), pp. 7529-7531.
- 9) Dembo, A. and Malah, D., "Signal synthesis from modified discrete short-time transform," *IEEE Trans. ASSP*, 36 (1988), pp. 168-181. (This paper is based on the results of the thesis).
- 10) Dembo, A. and Zeitouni, O., "General potential surfaces and neural networks", *Physical Review A*, 37 (1988), pp. 2134-2143.
- 11) Dembo, A., "Bounds on the extreme eigenvalues of positive definite Toeplitz matrices," *IEEE Trans. Inf. Theory*, 34 (1988), pp. 352-355.
- 12) Dembo, A. and Malah, D., "Statistical design of analysis/synthesis systems with quantization," *IEEE Trans. ASSP*, 36 (1988), pp. 328-341. (This paper is based on the results of the thesis).
- 13) Zeitouni, O. and Dembo, A., "An existence theorem and some properties of maximum a-posteriori estimation of trajectories of diffusion ", *Stochastics*, 23 (1988), pp. 197-218.
- 14) Dembo, A. and Zeitouni, O., "Maximum a-posteriori estimation of time varying ARMA processes from noisy measurements", *IEEE Trans. ASSP*, 36 (1988), pp. 471-476.
- 15) Zeitouni, O. and Dembo, A., "Exact filters for the estimation of the number of transitions of finite state continuous time Markov processes", *IEEE Trans. Inf. Theory*, 34 (1988), pp. 890-892.
- 16) Zeitouni, O. and Dembo, A., "On the maximum achievable accuracy in the nonlinear filtering problem", *IEEE Trans. Auto. Con.*, 33 (1988), pp. 965-967.
- 17) Dembo, A., "Signal reconstruction from noisy partial information of its transform," *IEEE Trans. ASSP*, 37 (1989), pp. 65-72.
- 18) Dembo, A., "On the capacity of associative memories with linear threshold functions," *IEEE Trans. Inf. Theory*, 35 (1989), pp. 709-720.
- 19) Dembo, A., "On random determinants," *Quarterly of Applied Mathematics*, XLVII (1989), pp. 185-196.
- 20) Dembo, A., "Simple proof of the concavity of the entropy power with respect to the variance of additive Gaussian noise," *IEEE Trans. Inf. Theory*, 35 (1989), pp. 887-888.
- 21) Ephraim, Y., Dembo, A. and Rabiner, L. R., "A minimum discrimination information approach for hidden Markov modeling," *IEEE Trans. Inf. Theory*, 35 (1989), pp. 1001-1014.
- 22) Dembo, A., "On Gaussian Feedback Capacity," *IEEE Trans. Inf. Theory*, 35 (1989), pp. 1072-1076.
- 23) Dembo, A., Mallows, C. L. and Shepp, L. A., "Embedding non-negative definite Toeplitz matrices in non-negative definite circulant matrices, with application to covariance estimation," *IEEE Trans. Inf. Theory*, 35 (1989), pp. 1206-1212.

- 24) Dembo, A. and Kailath, T., "Model free distributed learning," *IEEE Trans. Neural Networks*, 1 (1990), pp. 58-70.
- 25) Zeitouni, O. and Dembo, A., "A change of variables formula for Stratonovich integrals and existence of solutions for two point stochastic boundary value problems", *Probability Theory and Related Fields*, 84 (1990), pp. 411-425.
- 26) Karlin, S., Dembo, A. and Kawabata, T., "Statistical composition of high scoring segments from molecular sequences", *Annals of Statistics*, 18 (1990), pp. 571-581.
- 27) Dembo, A. and Salz, J., "On the least-squares tap adjustment algorithm in adaptive equalizers and echo cancelers", *IEEE Trans. on Comm.*, 38 (1990), pp. 622-628.
- 28) Dembo, A. and Zeitouni, O., "Maximum a-posteriori estimation of elliptic Gaussian fields observed via a nonlinear channel", *J. Multivariate Analysis*, 35 (1990), pp. 151-167.
- 29) Dembo, A., Farotimi, O., and Kailath, T., "High order absolutely stable neural networks", *IEEE Trans. on Circuits and Systems*, 38 (1991), pp. 57-65.
- 30) Dembo, A. and Zeitouni, O., "Onsager Machlup functional and maximum a-posteriori estimation for a class of non Gaussian random fields", *J. Multivariate Analysis*, 36 (1991), pp. 243-262.
- 31) Farotimi, O., Dembo, A., and Kailath, T., "A general weight matrix formulation using optimal control", *IEEE Trans. on Neural Networks*, 2 (1991), pp. 378-394.
- 32) Dembo, A., Cover, T. and Thomas, J., "Information theoretic inequalities", invited paper, *IEEE Trans. on Information Theory*, 37 (1991), pp. 1501-1518.
- 33) Dembo, A. and Karlin, S., "Strong limit theorems of empirical functionals for large exceedances of partial sums of i.i.d. variables", *Annals of Probability*, 19 (1991), pp. 1737-1755.
- 34) Dembo A. and Karlin, S., "Strong limit theorems of empirical distributions for large segmental exceedances of partial sums of Markov variables", *Annals of Probability*, 19 (1991), pp. 1756-1767.
- 35) Karlin, S., and Dembo A., "Limit distributions of maximal segmental score among Markov dependent partial sums", *Advances in Applied Probability*, 24 (1992), pp. 113-140.
- 36) Dembo, A. and Karlin, S., "Poisson approximations for r-scan processes", *Annals of Applied Probability*, 2 (1992), pp. 329-357.
- 37) Dembo, A. and Karlin, S., "Central limit theorems of partial sums for large segmental values", *Stochastic Processes and their Applications*, 45 (1993), pp. 259-271.
- 38) Nobel, A., and Dembo, A., "Uniform laws of averages for dependent processes", *Statistics and Probability Letters*, 17 (1993), pp. 169-172.
- 39) Dembo, A. and Zeitouni, O., "A large deviations analysis of range tracking loops", *IEEE Trans. Aut. Control*. 39 (1994), pp. 360-364.
- 40) Shamai, S. and Dembo, A., "Bounds on the symmetric binary cut-off rate for dispersive Gaussian channels", *IEEE Trans. on Commun.*, 42 (1994), pp. 39-53.
- 41) Dembo, A. and Peres, Y., "A topological criterion for hypothesis testing", *Annals of Statistics* 22 (1994), pp. 106-117.
- 42) Dembo, A., Karlin, S. and Zeitouni O., "Large exceedances for multidimensional Lévy processes", *Annals of Applied Probability*, 4 (1994), pp. 432-447.
- 43) Kawabata, T. and Dembo, A., "The rate-distortion dimension of sets and measures", *IEEE Trans. on Inf. Theory*, 40 (1994), pp. 1564-1572.
- 44) Siu, K. Y., Dembo, A. and Kailath, T., "On the Perceptron learning algorithm on data with high precision", *Journal of Computer and Systems Science*, 48 (1994), pp. 347-356.
- 45) Dembo, A., Karlin, S., and Zeitouni, O., "Critical Phenomena for sequence matching with scoring", *Annals of Probability* 22 (1994), pp. 1993-2021.

- 46) Dembo, A., Karlin, S. and Zeitouni, O., "Limit distribution of maximal non-aligned two-sequence segmental score", *Annals of Probability* 22 (1994), pp. 2022-2039.
- 47) Dembo, A., Galperin, V. and Zeitouni, O., "Exponential rates for error probabilities in DMPSK systems", *IEEE Trans. on Commun.* 43 (1995), pp. 915-921.
- 48) Dembo, A., Mayer-Wolf, E. and Zeitouni, O., "Exact behavior of Gaussian seminorms". *Stats. Prob. Letters* 23 (1995), pp. 275-280.
- 49) Dembo, A. and Zajic, T., "Large deviations: from empirical mean and measure to partial sums process", *Stochastic Processes and their Applications* 57 (1995), pp. 191-224.
- 50) Bryc, W. and Dembo, A., "On large deviations of empirical measures for stationary Gaussian processes", *Stochastic Processes and their Applications* 58 (1995), pp. 23-34.
- 51) Dembo, A. and Zeitouni, O., "Refinements of the Gibbs conditioning principle", *Probability Theory and Related Fields* 104 (1996), pp. 1-14.
- 52) Dembo, A. "Moderate deviations for martingales with bounded jumps". *Elect. Commun. in Probab.* 1 (1996), pp. 11-17.
- 53) Dembo, A. and Zeitouni, O., "Large deviations of sub-sampling from individual sequences". *Stats. Prob. Letters* 27 (1996), pp. 201-205.
- 54) Bryc, W. and Dembo, A., "Large deviations and strong mixing". *Annals Inst. Henri Poincare* 32 (1996), pp. 549-569.
- 55) Dembo, A., Peres, Y. and Zeitouni, O., "Tail estimates for one-dimensional random walk in random environment". *Comm. Math. Phys.* 181 (1996), pp. 667-683.
- 56) Dembo, A. and Zeitouni, O. "Transportation approach to some concentration inequalities in product spaces", *Elect. Commun. in Probab.* 1 (1996), pp. 83-90.
- 57) Bryc, W. and Dembo, A., "Large deviations for quadratic functionals of Gaussian processes". *Journal Theor. Probab.* 10 (1997), pp. 307-332.
- 58) Dembo, A. "Information inequalities and concentration of measure". *Annals of Probability* 25 (1997), pp. 927-939.
- 59) Dembo, A. and Zajic, T., "Uniform large and moderate deviations for functional empirical processes". *Stoch. Proc. and Appl.* 67 (1997), pp. 195-211.
- 60) Dembo, A. and Shao, Q., "Self-normalized moderate deviations and LILs". *Stoch. Proc. and Appl.* 75 (1998), pp. 51-65.
- 61) Dembo, A. and Kuelbs, J., "Refined Gibbs Conditioning Principle for Certain Infinite Dimensional Statistics", *Studia Scientiarum Mathematicarum Hungarica* 34, (1998), pp. 107-126.
- 62) Dembo, A. and Kontoyiannis, I., "The Asymptotics of Waiting Times Between Stationary Processes, Allowing Distortion". *Ann. of Appl. Probab.* 9 (1999), pp. 413-429.
- 63) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Thick Points for Transient Symmetric Stable Processes". *Elect. Journal in Probab.* 4 (1999), paper 10.
- 64) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Thick Points for Spatial Brownian Motion: Multifractal Analysis of Occupation Measure". *Ann. Probab.* 28 (2000), pp. 1-35.
- 65) Dembo, A., Vershik, A. and Zeitouni, O. "Large Deviations for Integer Partitions". *Markov Proc. Rel. Fields*, 6 (2000), pp. 147-180.
- 66) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Thin Points for Brownian Motion". *Annals Inst. Henri. Poincre*, 36 (2000), pp. 749-774.
- 67) Dembo, A., Kagan, A. and Shepp, L. Remarks on the maximum correlation coefficient. *Bernoulli*, 7 (2001), pp. 343-350.
- 68) Dembo, A., Gandolfi, A., Kesten, H. "Greedy lattice animals: negative values and unconstrained maxima". *Ann. Probab.*, 29 (2001), pp. 205-241.
- 69) Dembo, A. and Kontoyiannis, I. "Critical behavior in lossy source coding". *IEEE IT*, 47 (2001), pp. 1230-1242.

- 70) Ben Arous, G., Dembo, A. and Guionnet, A. "Aging of spherical spin glasses". *Prob. Th. Rel. Fields*, 120 (2001), pp. 1-67.
- 71) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Thick Points for Planar Brownian Motion and the Erdős-Taylor Conjecture on Random Walk". *Acta Math.* 186 (2001), pp. 239-270 (Article also featured in *Nature*, Vol. 413 (2001), "Where drunkards hang out" by I. Stewart).
- 72) Comets, F. and Dembo, A. "Ordered Overlaps in Disordered Mean-Field Models". *Prob. Th. Rel. Field.* 121 (2001), pp. 1-29.
- 73) Dembo, A., Gantert, N., Peres, Y., Zeitouni, O. "Large Deviations for Random walks on Galton-Watson trees: averaging and uncertainty". *Prob. Th. Rel. Field.* 122 (2002), pp. 241-288.
- 74) Dembo, A. and Kontoyiannis, I. "Source Coding, Large Deviations and Approximate Pattern Matching". invited paper, *IEEE IT* 48 (2002), pp. 1590-1615.
- 75) Dembo, A., Poonen, B., Shao, Q., Zeitouni, O. "Random polynomials having few or no real zeros". *J. Amer. Math. Soc.* 15 (2002), pp. 857-892.
- 76) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Thick Points for Intersections of Planar Sample Paths". *Trans. Amer. Math. Soc.* 354 (2002), pp. 4969-5003.
- 77) Dembo, A., Peres, Y. and Rosen, J. "Brownian Motion on compact manifolds: cover time and late points". *Elect. J. Probab.* 8 (2003), 15, pp. 1-14.
- 78) Dembo, A. and Weissman, T. "The minimax distortion redundancy in noisy source coding". *IEEE Trans. IT*, 49 (2003) pp. 3020-3030.
- 79) Dembo, A., Guionnet, A. and Zeitouni, O. "Moderate deviations for the spectral measure of certain random matrices". *Ann. Inst. H. Poinc., Probab. and Stat.*, 39 (2003) pp. 1013-1042.
- 80) Dembo, A., Deuschel, J.D. and Duffie, D. "Large portfolio losses". *Finance and Stochastics* 8 (2004), pp. 3-16.
- 81) Dembo, A., Gantert, N. and Zeitouni, O. "Large deviations for random walks in random environment with holding times". *Ann. Probab.* 32 (2004), pp. 996-1029.
- 82) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Cover times for Brownian motion and random walks in two dimensions". *Ann. Math.* 160 (2004), pp. 433-464.
- 83) Bryc, W., Dembo, A. and Kagan, A. "On the maximum correlation coefficient". *Theory Probab. and Appl.* (2004), pp. 191-198.
- 84) Dembo, A., Morters, P. and Sheffield, S. "Large deviations of Markov chains indexed by random trees". *Ann. Inst. H. Poinc., Probab. and Stat.* 41 (2005), pp. 971-996.
- 85) Dembo, A. and Weissman, T. "Universal denoising for the finite-input-general-output channel". *IEEE Trans. IT*, 51 (2005), pp. 1507-1517.
- 86) Bryc, W., Dembo, A. and Jiang, T. "Spectral measure of large random Hankel, Markov and Toeplitz matrices." *Ann. Probab.* 34 (2006), pp. 1-38.
- 87) Dembo, A., Peres, Y., Rosen, J. and Zeitouni, O. "Late points for random walks in two dimensions". *Ann. Probab.* 34 (2006), pp. 219-263.
- 88) Dembo, A. and Sznitman, A.S. "On the disconnection of a discrete cylinder by a random walk". *Prob. Th. Rel. Fields* 136 (2006), 321-340.
- 89) Ben Arous, G., Dembo, A. and Guionnet, A. "Cugliandolo-Kurchan equations for dynamics of spin glasses". *Prob. Th. Rel. Fields* 136 (2006), pp. 619-660.
- 90) Dembo, A and Shao, Q. "Large and moderate deviations for Hotelling's T-squared statistic." *Elect. Comm. Probab.* 11 (2006), pp. 149-159.
- 91) Dembo, A., Gantert, N., Peres, Y., Shi, Z. "Valleys and the maximum local time for random walk in random environment". *Prob. Th. Rel. Fields* 137 (2007), 443-474.

- 92) Dembo, A., Peres, Y., Rosen, J. "How large a disc is covered by a random walk in n steps?" *Ann. Probab.* 35 (2007), 577-601.
- 93) Dembo, A. and Deuschel, J.D. "Aging for interacting diffusion processes". *Ann. Inst. H. Poinc. Probab. and Stat.* 43 (2007), 461-480.
- 94) Dembo, A. Guionnet, A. and Mazza, C. "Limiting dynamics for spherical models of spin glasses at high temperature". *J. Stat. Phys.* 126 (2007), 781-816.
- 95) Dembo, A. and Montanari, A. "Finite size scaling for the core of large random hypergraphs". *Ann. Appl. Probab.* 18 (2008), pp. 1993-2040.
- 96) Belinschi, S., Dembo, A. and Guionnet A. "Spectral measure of heavy tailed band and covariance random matrices". *Comm. Math. Phys.* 289 (2009), pp. 1023-1055.
- 97) Dembo, A. and Montanari, A. "Ising models on locally tree-like graphs". *Ann. Appl. Probab.* 20 (2010), pp. 565-592.
- 98) Dembo A. and Montanari A. "Gibbs measures and phase transitions on sparse random graphs". Invited paper, *Brazilian J. of Probab. and Stat.* 24 (2010), pp. 137-211.
- 99) Dembo, A. and Deuschel, J.D. "Markovian perturbation, response and fluctuation dissipation theorem". *Ann. Inst. Henri Poinc.* 46 (2010), pp. 822-852.

Papers accepted or in press

- 100) Dembo, A. and Gao, F. "Persistence of iterated sums", to appear in *Ann. Inst. Henri Poinc.* 47 (2011).
- 101) Dembo, A. and Sun, N. "Central limit theorem for biased random walk on multi-type Galton-Watson trees", to appear in *Elec. J. Probab.* (2012).

Selected papers in conference proceedings

- 1) Dembo, A. and Zeitouni, O., "Large deviations for random distribution of mass", in "Random discrete structures" (Editors: D.J. Aldous and R. Pemantle), IMA volume 76, Springer-Verlag, 1994, pp. 45-53.
- 2) Dembo, A. and Rinott, Y., "Some examples of Normal approximations by Stein's method", in "Random discrete structures" (Editors: D.J. Aldous and R. Pemantle), IMA volume 76, Springer-Verlag, 1994, pp. 25-44.
- 3) Dembo, A. and Zeitouni, O., "Large deviations via parameter dependent change of measure and an application to the lower tail of Gaussian processes", in proceedings of the Ascona Conference on Stochastic Analysis, 1993 (Editors: E. Bolthausen, M. Dozzi and F. Russo), *Progress in Probability* volume 36, Birkhauser, 1995, pp. 111-121.
- 4) Dembo, A. and Zeitouni, O. "Moderate deviations for iterates of expanding maps", in "Statistics and control of Stochastic processes: the Liptser Festchrift" (Y. Kabanov, B. L. Rozovskii, A. N. Shiriyayev, eds.), World Scientific, 1997, pp. 1-11.
- 5) Dembo, A. and Shao, Q. "Self-normalized large deviations in vector spaces", in proceedings of the Oberwolfach meeting, high-dimensional probability (Eberlein, Hahn, Talagrand, eds.), *Progress in Probability*, 43 Birkhauser, 1998, pp. 28-32.
- 6) Dembo, A. "Simple random covering, disconnection, late and favorite points", *Proceedings of the Int. Congress of Math., Madrid 2006*, Vol. III, pp. 535-558.
- 7) Dembo, A. and Sznitman, A.S. "A lower bound on the disconnection time of a discrete cylinder". *Progress in Probability*, vol. 60, In and Out of Equilibrium 2, Birkhauser, 2008, pp. 211-227.