



Andrea Montanari

Robert and Barbara Kleist Professor in the School of Engineering and Professor of Statistics and, by courtesy, of Mathematics

Electrical Engineering

Bio

BIO

I am interested in developing efficient algorithms to make sense of large amounts of noisy data, extract information from observations, estimate signals from measurements. This effort spans several disciplines including statistics, computer science, information theory, machine learning.

I am also working on applications of these techniques to healthcare data analytics.

ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering
- Professor, Statistics
- Professor (By courtesy), Mathematics
- Member, Wu Tsai Neurosciences Institute

PROFESSIONAL EDUCATION

- PhD, Scuola Normale Superiore, Pisa, Italy (2001)

Teaching

COURSES

2020-21

- Inference, Estimation, and Information Processing: EE 378B (Win)
- Mathematical problems in Machine Learning: EE 375 (Spr)
- Theory of Probability III: MATH 230C, STATS 310C (Spr)

2019-20

- Theory of Probability I: MATH 230A, STATS 310A (Aut)

2018-19

- Consulting Workshop: STATS 390 (Spr)
- Inference, Estimation, and Information Processing: EE 378B (Spr)
- Theory of Statistics I: STATS 300A (Aut)

2017-18

- Modern Coding Theory: EE 388 (Spr)
- Stochastic Processes on Graphs: STATS 316 (Aut)

- Theory of Probability I: MATH 230A, STATS 310A (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Sohom Bhattacharya, Shi Dong, Michael Feldman, Yanjun Han, Jonathan Lacotte, Youngtak Sohn, Lisa Yamada, Qian Zhao

Postdoctoral Faculty Sponsor

Joe Zhong

Doctoral Dissertation Advisor (AC)

Michael Celentano, Kabir Chandrasekher, Theodor Misiakiewicz, Mark Sellke, Yuchen Wu

Doctoral (Program)

Kabir Chandrasekher, Qijia Jiang, Daria Reshetova, Khaled Saab, Basil Saeed

Publications

PUBLICATIONS

- **The Landscape of the Spiked Tensor Model** *COMMUNICATIONS ON PURE AND APPLIED MATHEMATICS*
Ben Arous, G., Mei, S., Montanari, A., Nica, M.
2019; 72 (11): 2282–2330
- **Fundamental Limits of Weak Recovery with Applications to Phase Retrieval** *FOUNDATIONS OF COMPUTATIONAL MATHEMATICS*
Mondelli, M., Montanari, A.
2019; 19 (3): 703–73
- **The spectral norm of random inner-product kernel matrices** *PROBABILITY THEORY AND RELATED FIELDS*
Fan, Z., Montanari, A.
2019; 173 (1-2): 27–85
- **Optimization of the Sherrington-Kirkpatrick Hamiltonian**
Montanari, A., IEEE
IEEE COMPUTER SOC.2019: 1417–33
- **A Statistical Model for Motifs Detection** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Javadi, H., Montanari, A.
2018; 64 (12): 7594–7612
- **THE LANDSCAPE OF EMPIRICAL RISK FOR NONCONVEX LOSSES** *ANNALS OF STATISTICS*
Mei, S., Bai, Y., Montanari, A.
2018; 46 (6): 2747–74
- **Spectral Algorithms for Tensor Completion** *COMMUNICATIONS ON PURE AND APPLIED MATHEMATICS*
Montanari, A., Sun, N.
2018; 71 (11): 2381–2425
- **Generating Random Networks Without Short Cycles** *OPERATIONS RESEARCH*
Bayati, M., Montanari, A., Saberi, A.
2018; 66 (5): 1227–46
- **A mean field view of the landscape of two-layer neural networks** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Mei, S., Montanari, A., Phan-Minh Nguyen
2018; 115 (33): E7665–E7671
- **A mean field view of the landscape of two-layer neural networks.** *Proceedings of the National Academy of Sciences of the United States of America*
Mei, S., Montanari, A., Nguyen, P.

2018

- **ONLINE RULES FOR CONTROL OF FALSE DISCOVERY RATE AND FALSE DISCOVERY EXCEEDANCE** *ANNALS OF STATISTICS*
Javanmard, A., Montanari, A.
2018; 46 (2): 526–54
- **Contextual Stochastic Block Models**
Deshpande, Y., Montanari, A., Mossel, E., Sen, S., Bengio, S., Wallach, H., Larochelle, H., Grauman, K., CesaBianchi, N., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2018
- **On the Limitation of Spectral Methods: From the Gaussian Hidden Clique Problem to Rank One Perturbations of Gaussian Tensors** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Montanari, A., Reichman, D., Zeitouni, O.
2017; 63 (3): 1572-1579
- **EXTREMAL CUTS OF SPARSE RANDOM GRAPHS** *ANNALS OF PROBABILITY*
Dembo, A., Montanari, A., Sen, S.
2017; 45 (2): 1190-1217
- **Universality of the Elastic Net Error**
Montanari, A., Phan-Minh Nguyen, IEEE
IEEE.2017: 2338–42
- **Inference in Graphical Models via Semidefinite Programming Hierarchies**
Erdogdu, M. A., Deshpande, Y., Montanari, A., Guyon, Luxburg, U. V., Bengio, S., Wallach, H., Fergus, R., Vishwanathan, S., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2017
- **How Well Do Local Algorithms Solve Semidefinite Programs?**
Fan, Z., Montanari, A., Hatami, H., McKenzie, P., King
ASSOC COMPUTING MACHINERY.2017: 604–14
- **High dimensional robust M-estimation: asymptotic variance via approximate message passing** *PROBABILITY THEORY AND RELATED FIELDS*
Donoho, D., Montanari, A.
2016; 166 (3-4): 935-969
- **Phase transitions in semidefinite relaxations** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Javanmard, A., Montanari, A., Ricci-Tersenghi, F.
2016; 113 (16): E2218-E2223
- **Non-Negative Principal Component Analysis: Message Passing Algorithms and Sharp Asymptotics** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Montanari, A., Richard, E.
2016; 62 (3): 1458-1484
- **Sparse PCA via Covariance Thresholding** *JOURNAL OF MACHINE LEARNING RESEARCH*
Deshpande, Y., Montanari, A.
2016; 17
- **Statistical analysis of a low cost method for multiple disease prediction.** *Statistical methods in medical research*
Bayati, M., Bhaskar, S., Montanari, A.
2016: 962280216680242-?
- **THE SET OF SOLUTIONS OF RANDOM XORSAT FORMULAE** *ANNALS OF APPLIED PROBABILITY*
Ibrahimi, M., Kanoria, Y., Kraning, M., Montanari, A.
2015; 25 (5): 2743-2808
- **Finding One Community in a Sparse Graph** *JOURNAL OF STATISTICAL PHYSICS*
Montanari, A.
2015; 161 (2): 273-299
- **Finding Hidden Cliques of Size $\sqrt{N/e}$ in Nearly Linear Time** *FOUNDATIONS OF COMPUTATIONAL MATHEMATICS*
Deshpande, Y., Montanari, A.

2015; 15 (4): 1069-1128

- **UNIVERSALITY IN POLYTOPE PHASE TRANSITIONS AND MESSAGE PASSING ALGORITHMS** *ANNALS OF APPLIED PROBABILITY*
Bayati, M., Lelarge, M., Montanari, A.
2015; 25 (2): 753-822
- **Bargaining dynamics in exchange networks** *JOURNAL OF ECONOMIC THEORY*
Bayati, M., Borgs, C., Chayes, J., Kanoria, Y., Montanari, A.
2015; 156: 417-454
- **Computational implications of reducing data to sufficient statistics** *ELECTRONIC JOURNAL OF STATISTICS*
Montanari, A.
2015; 9 (2): 2370-2390
- **A Low-Cost Method for Multiple Disease Prediction.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
Bayati, M., Bhaskar, S., Montanari, A.
2015; 2015: 329-338
- **On the Concentration of the Number of Solutions of Random Satisfiability Formulas** *RANDOM STRUCTURES & ALGORITHMS*
Abbe, E., Montanari, A.
2014; 45 (3): 362-382
- **Hypothesis Testing in High-Dimensional Regression Under the Gaussian Random Design Model: Asymptotic Theory** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Javanmard, A., Montanari, A.
2014; 60 (10): 6522-6554
- **Confidence Intervals and Hypothesis Testing for High-Dimensional Regression** *JOURNAL OF MACHINE LEARNING RESEARCH*
Javanmard, A., Montanari, A.
2014; 15: 2869-2909
- **Accelerated Time-of-Flight Mass Spectrometry** *IEEE TRANSACTIONS ON SIGNAL PROCESSING*
Ibrahimi, M., Montanari, A., Moore, G. S.
2014; 62 (15): 3784-3798
- **The Replica Symmetric Solution for Potts Models on d -Regular Graphs** *COMMUNICATIONS IN MATHEMATICAL PHYSICS*
Dembo, A., Montanari, A., Sly, A., Sun, N.
2014; 327 (2): 551-575
- **Information-Theoretically Optimal Compressed Sensing via Spatial Coupling and Approximate Message Passing** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Donoho, D. L., Javanmard, A., Montanari, A.
2013; 59 (11): 7434-7464
- **Optimal Coding for the Binary Deletion Channel With Small Deletion Probability** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Kanoria, Y., Montanari, A.
2013; 59 (10): 6192-6219
- **Localization from Incomplete Noisy Distance Measurements** *FOUNDATIONS OF COMPUTATIONAL MATHEMATICS*
Javanmard, A., Montanari, A.
2013; 13 (3): 297-345
- **Accurate Prediction of Phase Transitions in Compressed Sensing via a Connection to Minimax Denoising** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Donoho, D. L., Johnstone, I., Montanari, A.
2013; 59 (6): 3396-3433
- **The phase transition of matrix recovery from Gaussian measurements matches the minimax MSE of matrix denoising.** *Proceedings of the National Academy of Sciences of the United States of America*
Donoho, D. L., Gavish, M., Montanari, A.
2013; 110 (21): 8405-8410

- **Iterative Coding for Network Coding** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Montanari, A., Urbanke, R. L.
2013; 59 (3): 1563-1572
- **Factor models on locally tree-like graphs** *Annals of Probability*
Dembo, A., Montanari, A., Sun, N.
2013
- **The mutual information of a class of graphical channels** *51st Annual Allerton Conference on Communication, Control, and Computing*
Abbe, E., Montanari, A.
IEEE.2013: 20–25
- **Linear Bandits in High Dimension and Recommendation Systems** *50th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*
Deshpande, Y., Montanari, A.
IEEE.2013: 1750–1754
- **Nearly Optimal Sample Size in Hypothesis Testing for High-Dimensional Regression** *51st Annual Allerton Conference on Communication, Control, and Computing*
Javanmard, A., Montanari, A.
IEEE.2013: 1427–1434
- **Finding Hidden Cliques of Size in Nearly Linear Time**
Deshpande, Y., Montanari, A.
2013
- **Hypothesis Testing in High-Dimensional Regression under the Gaussian Random Design Model: Asymptotic Theory**
Javanmard, A., Montanari, A.
2013
- **Confidence Intervals and Hypothesis Testing for High-Dimensional Regression**
Javanmard, A., Montanari, A.
2013
- **High Dimensional Robust M-Estimation: Asymptotic Variance via Approximate Message Passing**
Donoho, D., Montanari, A.
2013
- **Lossy Compression of Discrete Sources via the Viterbi Algorithm** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Jalali, S., Montanari, A., Weissman, T.
2012; 58 (4): 2475-2489
- **The LASSO Risk for Gaussian Matrices** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Bayati, M., Montanari, A.
2012; 58 (4): 1997-2017
- **The weak limit of Ising models on locally tree-like graphs** *PROBABILITY THEORY AND RELATED FIELDS*
Montanari, A., Mossel, E., Sly, A.
2012; 152 (1-2): 31-51
- **Subsampling at Information Theoretically Optimal Rates** *IEEE International Symposium on Information Theory*
Javanmard, A., Montanari, A.
IEEE.2012
- **Universality in Polytope Phase Transitions and Message Passing Algorithms**
Bayati, M., Lelarge, M., Montanari, A.
2012
- **The noise sensitivity phase transition in compressed sensing** *IEEE Transactions on Information Theory*
Donoho, D., L., Maleki, A., Montanari, A.
2012

- **Graphical Models Concepts in Compressed Sensing** *in Compressed Sensing*
Montanari, A.
Cambridge university PRes.2012: 1
- **Universality in Polytope Phase Transitions and Iterative Algorithms** *IEEE International Symposium on Information Theory*
Bayati, M., Lelarge, M., Montanari, A.
IEEE.2012
- **Information-Theoretically Optimal Compressed Sensing via Spatial Coupling and Approximate Message Passing** *IEEE International Symposium on Information Theory*
Donoho, D. L., Javanmard, A., Montanari, A.
IEEE.2012
- **ACCELERATED TIME-OF-FLIGHT MASS SPECTROMETRY** *IEEE Statistical Signal Processing Workshop (SSP)*
Ibrahimi, M., Montanari, A., Moore, G. S.
IEEE.2012: 432–435
- **The Noise-Sensitivity Phase Transition in Compressed Sensing** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Donoho, D. L., Maleki, A., Montanari, A.
2011; 57 (10): 6920-6941
- **MAJORITY DYNAMICS ON TREES AND THE DYNAMIC CAVITY METHOD** *ANNALS OF APPLIED PROBABILITY*
Kanoria, Y., Montanari, A.
2011; 21 (5): 1694-1748
- **Applications of the Lindeberg Principle in Communications and Statistical Learning** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Korada, S. B., Montanari, A.
2011; 57 (4): 2440-2450
- **The Dynamics of Message Passing on Dense Graphs, with Applications to Compressed Sensing** *IEEE International Symposium on Information Theory*
Bayati, M., Montanari, A.
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2011: 764–85
- **Subexponential convergence for information aggregation on regular trees** *50th IEEE Conference of Decision and Control (CDC)/European Control Conference (ECC)*
Kanoria, Y., Montanari, A.
IEEE.2011: 5317–5322
- **Gossip PCA**
Korada, S., Montanari, A., Oh, S.
2011
- **Factor models on locally tree-like graphs**
Dembo, A., Montanari, A., Sun, N.
2011
- **Accurate Prediction of Phase Transitions in Compressed Sensing via a Connection to Minimax Denoising**
Donoho, D., Johnstone, I., Montanari, A.
2011
- **Information-Theoretically Optimal Compressed Sensing via Spatial Coupling and Approximate Message Passing**
Donoho, D., Javanmard, A., Montanari, A.
2011
- **Distributed Storage for Intermittent Energy Sources: Control Design and Performance Limits**
Kanoria, Y., Montanari, A., Tse, D., Zhang, B.
2011
- **Fast Convergence of Natural Bargaining Dynamics in Exchange Networks** *22nd Annual ACM/SIAM Symposium on Discrete Algorithms*
Kanoria, Y., Bayati, M., Borgs, C., Chayes, J., Montanari, A.

SIAM.2011: 1518–1537

- **Localization from Incomplete Noisy Distance Measurements** *IEEE International Symposium on Information Theory (ISIT)*
Javanmard, A., Montanari, A.
IEEE.2011: 1584–1588
- **Compressed Sensing over $l(p)$ -balls: Minimax Mean Square Error** *IEEE International Symposium on Information Theory (ISIT)*
Donoho, D., Johnstone, I., Maleki, A., Montanari, A.
IEEE.2011: 129–133
- **RECONSTRUCTION AND CLUSTERING IN RANDOM CONSTRAINT SATISFACTION PROBLEMS** *SIAM JOURNAL ON DISCRETE MATHEMATICS*
Montanari, A., Restrepo, R., Tetali, P.
2011; 25 (2): 771-808
- **Information Theoretic Limits on Learning Stochastic Differential Equations** *IEEE International Symposium on Information Theory (ISIT)*
Bento, J., Ibrahimi, M., Montanari, A.
IEEE.2011: 855–859
- **The spread of innovations in social networks** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Montanari, A., Saberi, A.
2010; 107 (47): 20196-20201
- **Matrix Completion from Noisy Entries** *JOURNAL OF MACHINE LEARNING RESEARCH*
Keshavan, R. H., Montanari, A., Oh, S.
2010; 11: 2057-2078
- **Matrix Completion From a Few Entries** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Keshavan, R. H., Montanari, A., Oh, S.
2010; 56 (6): 2980-2998
- **ISING MODELS ON LOCALLY TREE-LIKE GRAPHS** *ANNALS OF APPLIED PROBABILITY*
Dembo, A., Montanari, A.
2010; 20 (2): 565-592
- **Regularization for Matrix Completion** *2010 IEEE International Symposium on Information Theory*
Keshavan, R. H., Montanari, A.
IEEE.2010: 1503–1507
- **Learning Networks of Stochastic Differential Equations**
Bento, J., Ibrahimi, M., Montanari, A.
2010
- **Tight Thresholds for Cuckoo Hashing via XORSAT**
Dietzfelbinger, M., Goerd, A., Mitzenmacher, M., Montanari, A., Pagh, R., Rink, M.
2010
- **The LASSO risk: asymptotic results and real world examples**
Bayati, M., Bento, J., Montanari, A.
2010
- **Gibbs Measures and Phase Transitions on Sparse Random Graphs** *Brazilian Journal of Probability and Statistics*
Dembo, A., Montanari, A.
2008 Brazilian School of Probability.2010: 1
- **Ising models on locally tree-like graphs** *Annals of Applied Probability*
Dembo, A., Montanari, A.
2010
- **Fast Convergence of Natural Bargaining Dynamics in Exchange Networks**
Kanoria, Y., Bayati, M., Borgs, C., Chayes, J., Montanari, A.

2010

- **Majority dynamics on trees and the dynamic cavity method** *Annals of Applied Probability*
Kanoria, Y., Montanari, A.
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- **The Spread of Innovations in Social Networks**
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- **Graphical Models Concepts in Compressed Sensing**
Montanari, A.
2010
- **On the deletion channel with small deletion probability** *2010 IEEE International Symposium on Information Theory*
Kanoria, Y., Montanari, A.
IEEE.2010: 1002–1006
- **The dynamics of message passing on dense graphs, with applications to compressed sensing** *2010 IEEE International Symposium on Information Theory*
Bayati, M., Montanari, A.
IEEE.2010: 1528–1532
- **Tight Thresholds for Cuckoo Hashing via XORSAT** *37th International Colloquium on Automata, Languages and Programming*
Dietzfelbinger, M., Goerd, A., Mitzenmacher, M., Montanari, A., Pagh, R., Rink, M.
SPRINGER-VERLAG BERLIN.2010: 213–225
- **An Empirical Scaling Law for Polar Codes** *2010 IEEE International Symposium on Information Theory*
Korada, S. B., Montanari, A., Telatar, E., Urbanke, R.
IEEE.2010: 884–888
- **Message-passing algorithms for compressed sensing** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Donoho, D. L., Maleki, A., Montanari, A.
2009; 106 (45): 18914-18919
- **The Generalized Area Theorem and Some of its Consequences** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Measson, C., Montanari, A., Richardson, T. J., Urbanke, R.
2009; 55 (11): 4793-4821
- **Finite-Length Scaling for Iteratively Decoded LDPC Ensembles** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Amraoui, A., Montanari, A., Richardson, T., Urbanke, R.
2009; 55 (2): 473-498
- **Low-rank Matrix Completion with Noisy Observations: a Quantitative Comparison** *47th Annual Allerton Conference on Communication, Control, and Computing*
Keshavan, R. H., Montanari, A., Oh, S.
IEEE.2009: 1216–1222
- **Generating Random Graphs with Large Girth**
Bayati, M., Montanari, A., Saberi, A.
2009
- **Matrix Completion from a Few Entries**
Keshavan, R., Montanari, A., Oh, S.
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- **Matrix Completion from Noisy Entries**
Keshavan, R., Montanari, A., Oh, S.
2009
- **Which graphical models are difficult to learn?**

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- Bento, J., Montanari, A.
2009
- **Information, Physics, and Computation**
Mezard, M., Montanari, A.
Oxford University Press.2009
 - **An Implementable Scheme for Universal Lossy Compression of Discrete Markov Sources**
Jalali, S., Montanari, A., Weissman, T.
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 - **Matrix Completion from a Few Entries** *IEEE International Symposium on Information Theory (ISIT 2009)*
Keshavan, R. H., Oh, S., Montanari, A.
IEEE.2009: 324–328
 - **Convergence to Equilibrium in Local Interaction Games** *50th Annual IEEE Symposium on Foundations of Computer Science*
Montanari, A., Saberi, A.
IEEE COMPUTER SOC.2009: 303–312
 - **An Iterative Scheme for Near Optimal and Universal Lossy Compression** *IEEE Information Theory Workshop on Networking and Information Theory*
Jalali, S., Montanari, A., Weissman, T.
IEEE.2009: 231–235
 - **Generating random Tanner-graphs with large girth** *IEEE Information Theory Workshop (ITW)*
Bayati, M., Keshavan, R., Montanari, A., Oh, S., Saberi, A.
IEEE.2009: 154–157
 - **Generating Random Graphs with Large Girth** *20th Annual ACM-SIAM Symposium on Discrete Algorithms*
Bayati, M., Montanari, A., Saberi, A.
SIAM.2009: 566–575
 - **Maxwell Construction: The Hidden Bridge Between Iterative and Maximum a Posteriori Decoding** *IEEE TRANSACTIONS ON INFORMATION THEORY*
Measson, C., Montanari, A., Urbanke, R.
2008; 54 (12): 5277–5307
 - **Estimating random variables from random sparse observations** *EUROPEAN TRANSACTIONS ON TELECOMMUNICATIONS*
Montanari, A.
2008; 19 (4): 385–403
 - **Clusters of solutions and replica symmetry breaking in random k-satisfiability** *JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT*
Montanari, A., Ricci-Tersenghi, F., Semerjian, G.
2008
 - **Counter Braids** *IEEE Information Theory Workshop*
Lu, Y., Montanari, A., Prabhakar, B.
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 - **Finite Size Scaling for the Core of Large Random Hypergraphs** *Annals of Applied Probability*
Dembo, A., Montanari, A.
2008
 - **Counter Braids: A Novel Counter Architecture for Per-Flow Measurement** *International Conference on Measurement and Modeling of Computer Systems*
Lu, Y., Montanari, A., Prabhakar, B., Dharmapurikar, S., Kabbani, A.
ASSOC COMPUTING MACHINERY.2008: 121–32
 - **Counter Braids: Asymptotic Optimality of the Message Passing Decoding Algorithm** *46th Annual Allerton Conference on Communication, Control and Computing*
Lu, Y., Montanari, A., Prabhakar, B.
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- **Learning Low Rank Matrices from $O(n)$ Entries** *46th Annual Allerton Conference on Communication, Control and Computing*
Keshavan, R. H., Montanari, A., Oh, S.
IEEE.2008: 1365–1372
- **Computing the threshold shift for general channels** *IEEE International Symposium on Information Theory*
Ezri, J., Urbanke, R., Montanari, A., Oh, S.
IEEE.2008: 1448–1452
- **An Implementable Scheme for Universal Lossy Compression of Discrete Markov Sources** *19th Data Compression Conference*
Jalali, S., Montanari, A., Weissman, T.
IEEE COMPUTER SOC.2008: 292–301
- **The Slope Scaling Parameter for General Channels, Decoders, and Ensembles** *IEEE International Symposium on Information Theory*
Ezri, J., Montanari, A., Oh, S., Urbanke, R.
IEEE.2008: 1443–1447
- **Smooth compression, Gallager bound and Nonlinear sparse-graph codes** *IEEE International Symposium on Information Theory*
Montanari, A., Mossel, E.
IEEE.2008: 2474–2478
- **How to find good finite-length codes: from art towards science** *4th International Symposium on Turbo Codes and Related Topics*
Amraoui, A., Montanari, A., Urbanke, R.
WILEY-BLACKWELL.2007: 491–508
- **A simple one dimensional glassy Kac model** *JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT*
Montanari, A., Sinton, A.
2007
- **Gibbs states and the set of solutions of random constraint satisfaction problems** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Krzakala, F., Montanari, A., Ricci-Tersenghi, F., Semerjian, G., Zdeborova, L.
2007; 104 (25): 10318-10323
- **Reconstruction for models on random graphs** *48th Annual IEEE Symposium on Foundations of Computer Science*
Gerschenfeld, A., Montanari, A.
IEEE COMPUTER SOC.2007: 194–204
- **Detailed Network Measurements Using Sparse Graph Counters: The Theory**
Lu, Y., Montanari, A., Prabhakar, B.
2007
- **TP Decoding**
Lu, Y., Montanari, A., Measson, C.
2007
- **Counting Good Truth Assignments for Random Satisfiability Formulae**
Montanari, A., Shah, D.
2007
- **Solving Constraint Satisfaction Problems through Belief Propagation-guided Decimation**
Montanari, A., Ricci-Tersenghi, F., Semerjian, G.
2007
- **Modern Coding Theory: The Statistical Mechanics and Computer Science Point of View** *Les Houches Summer School on Mathematical Statistical Physics*
Montanari, A., Urbanke, R.
Elsevier.2007: 1
- **A generalization of the finite-length scaling approach beyond the BEC** *IEEE International Symposium on Information Theory*
Ezri, J., Montanari, A., Urbanke, R.
IEEE.2007: 1011–1015

- **Asymptotic rate versus design rate** *IEEE International Symposium on Information Theory*
Measson, C., Montanari, A., Urbanke, R.
IEEE.2007: 1541–1545
- **Rigorous inequalities between length and time scales in glassy systems** *JOURNAL OF STATISTICAL PHYSICS*
Montanari, A., Semerjian, G.
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- **On the dynamics of the glass transition on Bethe lattices** *JOURNAL OF STATISTICAL PHYSICS*
Montanari, A., Semerjian, G.
2006; 124 (1): 103-189
- **Precision electroweak measurements on the Z resonance** *PHYSICS REPORTS-REVIEW SECTION OF PHYSICS LETTERS*
Schael, S., Barate, R., Bruneliere, R., Buskulic, D., De Bonis, I., Decamp, D., Ghez, P., Goy, C., Jezequel, S., Lees, J. P., Lucotte, A., Martin, F., Merle, et al
2006; 427 (5-6): 257-454
- **How to Find Good Finite-Length Codes: From Art Towards Science** *European Transactions on Telecommunications*
Amraoui, A., Montanari, A., Urbanke, R.
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- **Finite-Length Scaling for Gallager A**
Ezri, J., Montanari, A., Urbanke, R.
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- **Two Lectures on Iterative Coding and Statistical Mechanics** *Les Houches Summer School on Mathematical Statistical Physics*
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- **The Asymptotic Error Floor of LDPC Ensembles Under BP Decoding**
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- **Analysis of Belief propagation for Non-Linear Problems: The Example of CDMA (or: How to Prove Tanaka's Formula)**
Montanari, A., Tse, D.
2006
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