




## Persi Diaconis

Mary V. Sunseri Professor in the School of Humanities and Sciences and Professor of Mathematics  
Statistics

 Curriculum Vitae available Online

### Bio

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#### BIO

I am a mathematician and statistician working in probability, combinatorics, and group theory with a focus on applications to statistics and scientific computing. A specialty is rates of convergence of Markov chains. I am currently interested in trying to adapt the many mathematical developments to say something useful to practitioners in large real-world simulations.

#### ACADEMIC APPOINTMENTS

- Professor, Statistics
- Professor, Mathematics

#### ADMINISTRATIVE APPOINTMENTS

- Visiting Professor, Université de Nice-Sophia Antipolis, (2006-2007)
- Fellow, Center for Advanced Study in the Behavioral Sciences, (1999-2000)
- Mary Sunseri Professor, Department of Statistics, Stanford University, (1998- present)
- Professor of Mathematics, Stanford University, (1998- present)
- David Duncan Professor, Department of Mathematics and ORIE, Cornell University, (1996-1998)
- George Vasmer Leverett Professor of Mathematics, Harvard University, (1987-1997)
- Visiting Professor, Department of Mathematics, Harvard University, (1985-1986)
- Visiting Professor, Department of Mathematics, Massachusetts Institute of Technology, (1985-1986)
- Professor of Statistics, Stanford University, (1981-1987)
- Visiting Professor, Department of Statistics, Harvard University, (1981-1982)
- Associate Professor of Statistics, Stanford University, (1979-1980)
- Research Staff Member, AT&T Bell Laboratories, (1978-1979)
- Assistant Professor of Statistics, Stanford University, (1974-1979)

#### PROGRAM AFFILIATIONS

- Symbolic Systems Program

#### LINKS

- Statistics Department Faculty Page: <https://statistics.stanford.edu/people/persi-diaconis>
- Mathematics Department Faculty Page: <https://mathematics.stanford.edu/people/persi-diaconis>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Many of my publications during the past three years have focused on rates of convergence of Markov chains to their stationary distributions. This is an important part of applied probability and scientific computing. I am particularly pleased by (a) results with Phillip Wood showing that most birth and death chains on  $\{0,1,\dots\}$  do not show a sharp cut-off; (b) results with Jason Fulman and Susan Holmes giving a careful analysis of casino shuffling machines; (c) results with Sourav Chatterjee making new contributions to a practical physics problem, Bose-Einstein condensation.

I think I opened up two new areas in the study of Markov chains: rates of convergence to quasi-stationarity and the study of "features". For the first, a host of absorbing Markov chains appear in genetics, biology, and queuing. These have quasi-stationary distributions: given that the chain has not been absorbed by time  $T$ , where is it likely to be? We ask about quantitative versions, how large does  $T$  have to be to make the asymptotics useful? The many tools available for ergodic chains need to be completely revised. These papers make a start at revising the geometric theory (Poincare, Cheeger, Nash, log Sobolev). For the second area, "features", often researchers don't care about all aspects of a chain, but are only interested in a few features; then the rates of convergence can change. I proved such things for riffle shuffling but now see how to do things for other chains.

In addition to my work on Markov chains, I have completed a number of statistical projects. One of the main ones is for the statistical analysis of graph and network data. Working with Sourav Chatterjee, Svante Janson, and Susan Holmes we built a theory to allow analysis of familiar exponential models. These can have surprising properties: sometimes  $N$  parameters can be accurately estimated based on a sample of size one and sometimes a large amount of data can still lead to inconsistent estimators. This work opened up the connection between statistics and the emerging area of graph limit theory. In turn, that connection has led to a torrent of follow-up work, conferences, and a slew of real-world applications.

One key topic in my work has been generalizations of de Finetti's notion of exchangeability. The graph work above leans on the connections I made between graph limit theory and the Aldous-Hoover theorem. In a different direction, working with Sergio Bacallado and Susan Holmes, I managed to develop a practical theory of "almost exchangeability" and apply it to some biological problems. I am busy following this up with some more theoretical work on de Finetti-style representation theorems for approximate exchangeable data.

A very different statistical development is represented by my work with Bob Griffiths developing bivariate distributions for data with binomial or multinomial models, and with Bailey, et al. which combines my group-theoretic methods for analysis of designed experiments with more classical approaches of Bailey and Nelder's "general balance". It is surprising that these important problems haven't been seriously treated to date. Finally, work with my students Bhaswar Bhattacharya and Sumit Mukherjee on generalizations of the birthday problem to random graphs has direct application to Friedman-Rafsky two-sample tests.

## Teaching

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### COURSES

#### 2021-22

- Elementary Theory of Numbers: MATH 152 (Win)
- Theory of Probability I: MATH 230A, STATS 310A (Aut)
- Topics in Representation Theory: MATH 263A (Aut)

#### 2020-21

- Mathematics and Statistics of Gambling: MATH 231, STATS 334 (Aut)
- Modern Markov Chains: STATS 318 (Spr)

- Modules and Group Representations: MATH 122 (Spr)

#### 2019-20

- Groups and Rings: MATH 120 (Spr)
- Theory of Statistics II: STATS 300B (Win)
- Topics in Combinatorics: MATH 233C (Spr)

#### 2018-19

- Algebraic Combinatorics and Symmetric Functions: MATH 263A (Aut)
- Modern Markov Chains: STATS 318 (Spr)
- Sampling: STATS 204 (Spr)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Yeganeh Ali Mohammadi, Souvik Ray, Mark Sellke

#### Doctoral Dissertation Advisor (AC)

Zhiqi Li, Milo Marsden, Mackenzie Simper

## Publications

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### PUBLICATIONS

- **Guessing about Guessing: Practical Strategies for Card Guessing with Feedback** *AMERICAN MATHEMATICAL MONTHLY*  
Diaconis, P., Graham, R., Spiro, S.  
2022
- **Partial Exchangeability for Contingency Tables** *MATHEMATICS*  
Diaconis, P.  
2022; 10 (3)
- **A PHASE TRANSITION FOR REPEATED AVERAGES** *ANNALS OF PROBABILITY*  
Chatterjee, S., Diaconis, P., Sly, A., Zhang, L.  
2022; 50 (1): 1-17
- **Randomized sequential importance sampling for estimating the number of perfect matchings in bipartite graphs** *ADVANCES IN APPLIED MATHEMATICS*  
Diaconis, P., Kolesnik, B.  
2021; 131
- **Hahn polynomials and the Burnside process** *RAMANUJAN JOURNAL*  
Diaconis, P., Zhong, C.  
2021
- **Speeding up Markov chains with deterministic jumps (vol 178, pg 1193, 2020)** *PROBABILITY THEORY AND RELATED FIELDS*  
Chatterjee, S., Diaconis, P.  
2021
- **Discussion of "A Gibbs Sampler for a Class of Random Convex Polytopes"** *JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION*  
Diaconis, P., Wang, G.  
2021; 116 (535): 1193-1195
- **The-Square-and-Add Markov Chain** *MATHEMATICAL INTELLIGENCER*  
Diaconis, P., He, J., Martin Isaacs, I.  
2021

- **Permanental generating functions and sequential importance sampling** *ADVANCES IN APPLIED MATHEMATICS*  
Chung, F., Diaconis, P., Graham, R.  
2021; 126
- **RANDOM WALK ON UNIPOTENT MATRIX GROUPS** *ANNALES SCIENTIFIQUES DE L'ECOLE NORMALE SUPERIEURE*  
Diaconis, P., Hough, R.  
2021; 54 (3): 587-625
- **GAMBLER'S RUIN ESTIMATES ON FINITE INNER UNIFORM DOMAINS** *ANNALS OF APPLIED PROBABILITY*  
Diaconis, P., Houston-Edwards, K., Saloff-Coste, L.  
2021; 31 (2): 865-895
- **Tensor product Markov chains** *JOURNAL OF ALGEBRA*  
Benkart, G., Diaconis, P., Liebeck, M. W., Pham Huu Tiep  
2020; 561: 17–83
- **Speeding up Markov chains with deterministic jumps** *PROBABILITY THEORY AND RELATED FIELDS*  
Chatterjee, S., Diaconis, P.  
2020
- **Analytic-geometric methods for finite Markov chains with applications to quasi-stationarity** *ALEA-LATIN AMERICAN JOURNAL OF PROBABILITY AND MATHEMATICAL STATISTICS*  
Diaconis, P., Houston-Edwards, K., Saloff-Coste, L.  
2020; 17 (2): 901–91
- **Reproducing kernel orthogonal polynomials on the multinomial distribution** *JOURNAL OF APPROXIMATION THEORY*  
Diaconis, P., Griffiths, R. C.  
2019; 242: 1–30
- **THE SAMPLE SIZE REQUIRED IN IMPORTANCE SAMPLING** *ANNALS OF APPLIED PROBABILITY*  
Chatterjee, S., Diaconis, P.  
2018; 28 (2): 1099–1135
- **Bayesian goodness of fit tests: a conversation for David Mumford** *ANNALS OF MATHEMATICAL SCIENCES AND APPLICATIONS*  
Diaconis, P., Wang, G.  
2018; 3 (1): 287–308
- **A CENTRAL LIMIT THEOREM FOR A NEW STATISTIC ON PERMUTATIONS** *INDIAN JOURNAL OF PURE & APPLIED MATHEMATICS*  
Chatterjee, S., Diaconis, P.  
2017; 48 (4): 561–73
- **UNIVERSAL LIMIT THEOREMS IN GRAPH COLORING PROBLEMS WITH CONNECTIONS TO EXTREMAL COMBINATORICS** *ANNALS OF APPLIED PROBABILITY*  
Bhattacharya, B. B., Diaconis, P., Mukherjee, S.  
2017; 27 (1): 337-394
- **Useful Bounds on the Extreme Eigenvalues and Vectors of Matrices for Harper's Operators** *LARGE TRUNCATED TOEPLITZ MATRICES, TOEPLITZ OPERATORS, AND RELATED TOPICS: THE ALBRECHT BOTTCHER ANNIVERSARY VOLUME*  
Bump, D., Diaconis, P., Hicks, A., Miclo, L., Widom, H., Bini, D. A., Ehrhardt, T., Karlovich, A. Y., Spitkovsky  
2017; 259: 235–65
- **The Mathematics of the Flip and Horseshoe Shuffles** *AMERICAN MATHEMATICAL MONTHLY*  
Butler, S., Diaconis, P., Graham, R.  
2016; 123 (6): 542-556
- **Estimates on the amplitude of the first Dirichlet eigenvector in discrete frameworks** *SCIENCE CHINA-MATHEMATICS*  
Diaconis, P., Miclo, L.  
2016; 59 (2): 205-226
- **Central limit theorems for some set partition statistics** *ADVANCES IN APPLIED MATHEMATICS*

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- Chern, B., Diaconis, P., Kane, D. M., Rhoades, R. C.  
2015; 70: 92-105
- **de Finetti Priors using Markov chain Monte Carlo computations** *STATISTICS AND COMPUTING*  
Bacallado, S., Diaconis, P., Holmes, S.  
2015; 25 (4): 797-808
  - **de Finetti Priors using Markov chain Monte Carlo computations.** *Statistics and computing*  
Bacallado, S., Diaconis, P., Holmes, S.  
2015; 25 (4): 797-808
  - **An introduction to multivariate Krawtchouk polynomials and their applications** *JOURNAL OF STATISTICAL PLANNING AND INFERENCE*  
Diaconis, P., Griffiths, R.  
2014; 154: 39-53
  - **Carries, Group Theory, and Additive Combinatorics** *AMERICAN MATHEMATICAL MONTHLY*  
Diaconis, P., Shao, X., Soundararajan, K.  
2014; 121 (8): 674-688
  - **Unseparated pairs and fixed points in random permutations** *ADVANCES IN APPLIED MATHEMATICS*  
Diaconis, P., Evans, S. N., Graham, R.  
2014; 61: 102-124
  - **Combinatorics of balanced carries** *ADVANCES IN APPLIED MATHEMATICS*  
Diaconis, P., Fulman, J.  
2014; 59: 8-25
  - **Convolution powers of complex functions on  $\mathbf{Z}$**  *MATHEMATISCHE NACHRICHTEN*  
Diaconis, P., Saloff-Coste, L.  
2014; 287 (10): 1106-1130
  - **Hopf algebras and Markov chains: two examples and a theory** *JOURNAL OF ALGEBRAIC COMBINATORICS*  
Diaconis, P., Pang, C. Y., Ram, A.  
2014; 39 (3): 527-585
  - **Fluctuations of the Bose-Einstein condensate** *JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL*  
Chatterjee, S., Diaconis, P.  
2014; 47 (8)
  - **An Introduction to Multivariate Krawtchouk Polynomials and their Applications** *Journal of Statistical Planning and Inference*  
Diaconis, P., Griffiths, R.  
2014
  - **ESTIMATING AND UNDERSTANDING EXPONENTIAL RANDOM GRAPH MODELS** *ANNALS OF STATISTICS*  
Chatterjee, S., Diaconis, P.  
2013; 41 (5): 2428-2461
  - **Some things we've learned (about Markov chain Monte Carlo)** *BERNOULLI*  
Diaconis, P.  
2013; 19 (4): 1294-1305
  - **ANALYSIS OF CASINO SHELF SHUFFLING MACHINES** *ANNALS OF APPLIED PROBABILITY*  
Diaconis, P., Fulman, J., Holmes, S.  
2013; 23 (4): 1692-1720
  - **Random doubly stochastic tridiagonal matrices** *RANDOM STRUCTURES & ALGORITHMS*  
Diaconis, P., Wood, P. M.  
2013; 42 (4): 403-437
  - **Note on a partition limit theorem for rank and crank** *BULLETIN OF THE LONDON MATHEMATICAL SOCIETY*  
Diaconis, P., Janson, S., Rhoades, R. C.

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2013; 45: 551-553

- **Interval Graph Limits** *ANNALS OF COMBINATORICS*  
Diaconis, P., Holmes, S., Janson, S.  
2013; 17 (1): 27-52
- **Interval Graph Limits.** *Annals of combinatorics*  
Diaconis, P., Holmes, S., Janson, S.  
2013; 17 (1): 27-52
- **Sampling from a Manifold** *Advances in Modern Statistical Theory and Applications: A Festschrift in honor of Morris L. Eaton*  
Diaconis, P., Holmes, S., Shahashahani, M.  
edited by Jones, G., Shen, X.  
Institute of Mathematical Statistics.2013: 102–125
- **Closed Expressions for Averages of Set Partition Statistics** *International Journal of Modern Math*  
Chern, B., Diaconis, P., Chatterjee, S.  
2013
- **Carries, Group Theory and Additive Combinatorics** *American Mathematical Monthly*  
Diaconis, P., Shao, X., Soundararajan, K.  
2013
- **Fluctuations of the Bose-Einstein Condensate** *Journal of Physics A: Mathematical and Theoretical*  
Chatterjee, S., Diaconis, P.  
2013; 47 (8)
- **Foulkes characters, Eulerian idempotents, and an amazing matrix** *JOURNAL OF ALGEBRAIC COMBINATORICS*  
Diaconis, P., Fulman, J.  
2012; 36 (3): 425-440
- **Gibbs/Metropolis algorithms on a convex polytope** *MATHEMATISCHE ZEITSCHRIFT*  
Diaconis, P., Lebeau, G., Michel, L.  
2012; 272 (1-2): 109-129
- **A PROBABILISTIC INTERPRETATION OF THE MACDONALD POLYNOMIALS** *ANNALS OF PROBABILITY*  
Diaconis, P., Ram, A.  
2012; 40 (5): 1861-1896
- **On Dirichlet eigenvectors for neutral two-dimensional Markov chains** *ELECTRONIC JOURNAL OF PROBABILITY*  
Champagnat, N., Diaconis, P., Miclo, L.  
2012; 17: 1-41
- **EXCHANGEABLE PAIRS OF BERNOULLI RANDOM VARIABLES, KRAWTCHOUCK POLYNOMIALS, AND EHRENFEST URNS** *AUSTRALIAN & NEW ZEALAND JOURNAL OF STATISTICS*  
Diaconis, P., Griffiths, R.  
2012; 54 (1): 81-101
- **Supercharacters, symmetric functions in noncommuting variables, and related Hopf algebras** *ADVANCES IN MATHEMATICS*  
Aguilar, M., Andre, C., Benedetti, C., Bergeron, N., Chen, Z., Diaconis, P., Hendrickson, A., Hsiao, S., Isaacs, I. M., Jedwab, A., Johnson, K., Karaali, G., Lauve, et al  
2012; 229 (4): 2310-2337
- **On the spectral analysis of second-order Markov chains** *Annales de la Faculté des Sciences de Toulouse, Mathématiques*  
Diaconis, P., Miclo, L.  
2012; 22: 573-621
- **Riffle Shuffles with Biased Cuts** *Formal Power Series and Algebraic Combinatorics Conference*  
Assaf, S., Diaconis, P., Soundararajan, K.  
2012

- **RANDOM GRAPHS WITH A GIVEN DEGREE SEQUENCE** *ANNALS OF APPLIED PROBABILITY*  
Chatterjee, S., Diaconis, P., Sly, A.  
2011; 21 (4): 1400-1435
- **The Mathematics of Mixing Things Up** *JOURNAL OF STATISTICAL PHYSICS*  
Diaconis, P.  
2011; 144 (3): 445-458
- **Geometric analysis for the metropolis algorithm on Lipschitz domains** *INVENTIONES MATHEMATICAE*  
Diaconis, P., Lebeau, G., Michel, L.  
2011; 185 (2): 239-281
- **A RULE OF THUMB FOR RIFFLE SHUFFLING** *ANNALS OF APPLIED PROBABILITY*  
Assaf, S., Diaconis, P., Soundararajan, K.  
2011; 21 (3): 843-875
- **On Barycentric Subdivision** *COMBINATORICS PROBABILITY & COMPUTING*  
Diaconis, P., Miclo, L.  
2011; 20 (2): 213-237
- **Magical Mathematics: The Mathematical Ideas that Animate Great Magic Tricks**  
Diaconis, P., Graham, R.  
Princeton University Press.2011
- **STOCHASTIC ALTERNATING PROJECTIONS** *ILLINOIS JOURNAL OF MATHEMATICS*  
Diaconis, P., Khare, K., Saloff-Coste, L.  
2010; 54 (3): 963-979
- **ON ADDING A LIST OF NUMBERS (AND OTHER ONE-DEPENDENT DETERMINANTAL PROCESSES)** *BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY*  
Borodin, A., Diaconis, P., Fulman, J.  
2010; 47 (4): 639-670
- **Functions of random walks on hyperplane arrangements** *ADVANCES IN APPLIED MATHEMATICS*  
Athanasiadis, C. A., Diaconis, P.  
2010; 45 (3): 410-437
- **Threads Through Group Theory** *International Conference on the Character Theory of Finite Groups, in Honor of I Martin Isaacs*  
Diaconis, P.  
AMER MATHEMATICAL SOC.2010: 33-47
- **Geometric Analysis for the Metropolis Algorithm on Lipschitz Domains** *Inventiones Mathematicae*  
Diaconis, P., Lebeau, G., Michel, L.  
2010; 185 (2): 239-281
- **Properties of Uniform Doubly Stochastic Matrices** *Annals of Applied Probability*  
Diaconis, P., Chatterjee, S., Sly, A.  
2010
- **Gibbs Sampling, Conjugate Priors and Coupling** *Sankhya*  
Diaconis, P., Khare, K., Saloff-Coste, L.  
2010; 72-A (1): 136-169
- **Carries, Shuffling, and an Amazing Matrix** *AMERICAN MATHEMATICAL MONTHLY*  
Diaconis, P., Fulman, J.  
2009; 116 (9): 788-803
- **On Times to Quasi-stationarity for Birth and Death Processes** *JOURNAL OF THEORETICAL PROBABILITY*  
Diaconis, P., Miclo, L.  
2009; 22 (3): 558-586

- **Carries, shuffling, and symmetric functions** *ADVANCES IN APPLIED MATHEMATICS*  
Diaconis, P., Fulman, J.  
2009; 43 (2): 176-196
- **Micro-local analysis for the Metropolis algorithm** *MATHEMATISCHE ZEITSCHRIFT*  
Diaconis, P., Lebeau, G.  
2009; 262 (2): 411-447
- **SUPERCHARACTER FORMULAS FOR PATTERN GROUPS** *TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY*  
Diaconis, P., Thiem, N.  
2009; 361 (7): 3501-3533
- **A Sequential Importance Sampling Algorithm for Generating Random Graphs With Prescribed Degrees** *Journal of Internet Mathematics*  
Diaconis, P., Blitzstein, J.  
2009; 6 (4): 489-522
- **Book Review: Probabilistic Symmetries and Invariance Principles by Olav Kallenberg, Probability and its Applications** *Bulletin of the American Mathematical Society*  
Diaconis, P.  
2009
- **Threshold Graph Limits and Random Threshold Graphs** *Journal of Internet Mathematics*  
Diaconis, P., Holmes, S., Janson, S.  
2009; 5 (3): 267-320
- **Riffle shuffles of a deck with repeated cards** *21st International Conference on Formal Power Series and Algebraic Combinatorics*  
Diaconis, P., Assaf, S., Soundararajan, K.  
2009: 89-102
- **FASTEST MIXING MARKOV CHAIN ON GRAPHS WITH SYMMETRIES** *SIAM JOURNAL ON OPTIMIZATION*  
Boyd, S., Diaconis, P., Parrilo, P., Xiao, L.  
2009; 20 (2): 792-819
- **On characterizations of Metropolis type algorithms in continuous time** *ALEA-LATIN AMERICAN JOURNAL OF PROBABILITY AND MATHEMATICAL STATISTICS*  
Diaconis, P., Miclo, L.  
2009; 6: 199-238
- **THE MARKOV CHAIN MONTE CARLO REVOLUTION** *BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY*  
Diaconis, P.  
2009; 46 (2): 179-205
- **HORSESHOES IN MULTIDIMENSIONAL SCALING AND LOCAL KERNEL METHODS** *ANNALS OF APPLIED STATISTICS*  
Diaconis, P., Goel, S., Holmes, S.  
2008; 2 (3): 777-807
- **On fixed points of permutations** *JOURNAL OF ALGEBRAIC COMBINATORICS*  
Diaconis, P., Fulman, J., Guralnick, R.  
2008; 28 (1): 189-218
- **Gibbs sampling, exponential families and orthogonal polynomials** *STATISTICAL SCIENCE*  
Diaconis, P., Khare, K., Saloff-Coste, L.  
2008; 23 (2): 151-178
- **Supercharacters and superclasses for algebra groups** *TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY*  
Diaconis, P., Isaacs, I. M.  
2008; 360 (5): 2359-2392
- **Threshold Graph Limits and Random Threshold Graphs.** *Internet mathematics*  
Diaconis, P., Holmes, S., Janson, S.



2008; 5 (3): 267-320

- **Comment: Gibbs Sampling, Exponential Families and Orthogonal Polynomials** *Statistical Science*  
Berti, P., Consonni, G., Pratelli, L., Rigo, P., Diaconis, P.  
2008; 23 (2): 179-182
- **Projection Pursuit for Discrete Data** *Probability and Statistics: Essays in Honor of David A. Freedman*  
Diaconis, P., Salzman, J.  
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- **Products of Universal Cycles** *A lifetime of puzzles: a collection of puzzles in honor of Martin Gardner*  
Diaconis, P., Graham, R. L.  
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AK Peters, Ltd..2008: 35–55
- **Graph Limits and Exchangeable Random Graphs** *Rendiconti di Matematica*  
Diaconis, P., Janson, S.  
2008; VII (28): 33-61
- **Comment** *Journal of the American Statistical Association*  
Diaconis, P., Lehmann, E.  
2008; 103 (481): 16
- **Comment: Gibbs Sampling, Exponential Families and Orthogonal Polynomials** *Statistical Science*  
Diaconis, P., Jones, G. L., Johnson, A. A.  
2008; 23 (2): 183-186
- **Rejoinder: Gibbs Sampling, Exponential Families and Orthogonal Polynomials** *Statistical Science*  
Diaconis, P., Khare, K., Saloff-Coste, L.  
2008; 23 (2): 196-200
- **Shuffling Cards, Adding Numbers, and Symmetric Functions** *19th ACM-SIAM Symposium on Discrete Algorithms*  
Diaconis, P.  
SIAM.2008: 560–560
- **Dynamical bias in the coin toss** *SIAM REVIEW*  
Diaconis, P., Holmes, S., Montgomery, R.  
2007; 49 (2): 211-235
- **The Solutions to Elmsley's Problem** *Math Horizons*  
Diaconis, P., Graham, R. L.  
2007; 14: 22-27
- **Hit and Run as a Unifying Device** *Journal de la Société Française de Statistique*  
Diaconis, P., Graham, R. L.  
2007; 148 (4): 5-28
- **The fastest mixing Markov process on a graph and a connection to a maximum variance unfolding problem** *SIAM REVIEW*  
Sun, J., Boyd, S., Xiao, L., Diaconis, P.  
2006; 48 (4): 681-699
- **Separation cut-offs for birth and death chains** *ANNALS OF APPLIED PROBABILITY*  
Diaconis, P., Saloff-Coste, L.  
2006; 16 (4): 2098-2122
- **Bayesian analysis for reversible Markov chains** *ANNALS OF STATISTICS*  
Diaconis, P., Rolles, S. W.  
2006; 34 (3): 1270-1292
- **Examples comparing importance sampling and the metropolis algorithm** *ILLINOIS JOURNAL OF MATHEMATICS*  
Bassetti, F., Diaconis, P.

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2006; 50 (1): 67-91

- **Markov bases for noncommutative Fourier analysis of ranked data** *Workshop on Computational Algebraic Statistics*  
Diaconis, P., Eriksson, N.  
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- **Fastest mixing Markov chain on a path** *AMERICAN MATHEMATICAL MONTHLY*  
Boyd, S., Diaconis, P., Sun, J., Xiao, L.  
2006; 113 (1): 70-74
- **Mathematical Statistics** *Princeton Companion for Mathematics*  
Diaconis, P.  
edited by Gowers, T.  
Princeton University Press.2006
- **Sequential Monte Carlo methods for statistical analysis of tables** *JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION*  
Chen, Y. G., Diaconis, P., Holmes, S. R., Liu, J. S.  
2005; 100 (469): 109-120
- **Analysis of a Bose-Einstein Markov chain** *ANNALES DE L INSTITUT HENRI POINCARÉ-PROBABILITES ET STATISTIQUES*  
Diaconis, P.  
2005; 41 (3): 409-418
- **Exchangeable Pairs and Poisson Approximation** *Probability Surveys*  
Diaconis, P., Chatterjee, S., Meckes, E.  
2005; 2 (1): 64-106
- **Symmetry Analysis of Reversible Markov Chains** *Journal of Internet Mathematics*  
Diaconis, P., Boyd, S., Parrilo, P., Xiao, L.  
2005; 2 (1): 31-71
- **What is...a Random Matrix** *Notices of the American Mathematical Society*  
Diaconis, P.  
2005; 52 (11): 1348-1349
- **Fastest mixing Markov chain on a graph** *SIAM REVIEW*  
Boyd, S., Diaconis, P., Xiao, L.  
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- **A super-class walk on upper-triangular matrices** *JOURNAL OF ALGEBRA*  
Arias-Castro, E., Diaconis, P., Stanley, R.  
2004; 278 (2): 739-765
- **Random matrices, magic squares and matching polynomials** *ELECTRONIC JOURNAL OF COMBINATORICS*  
Diaconis, P., Gamburd, A.  
2004; 11 (2)
- **The Markov moment problem and de Finetti's theorem: Part I** *MATHEMATISCHE ZEITSCHRIFT*  
Diaconis, P., Freedman, D.  
2004; 247 (1): 183-199
- **The Markov moment problem and de Finetti's theorem: Part II** *MATHEMATISCHE ZEITSCHRIFT*  
Diaconis, P., Freedman, D.  
2004; 247 (1): 201-212
- **Numerical results for the metropolis algorithm** *EXPERIMENTAL MATHEMATICS*  
Diaconis, P., Neuberger, J. W.  
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