

PUBLICATIONS

JOURNAL PAPERS

Submitted

1. A.M. Devraj, I. Kontoyiannis and S.P. Meyn. “Geometric ergodicity in a weighted Sobolev space.” Submitted.
2. M. Madiman and I. Kontoyiannis. “Entropy bounds on abelian groups and the Ruzsa divergence.” To appear, *IEEE Transactions on Information Theory*.

Published or in press

3. I. Kontoyiannis and S.P. Meyn. “Approximating a diffusion by a hidden Markov model.” *Stochastic Processes and their Applications*, **127**, no. 8, pp. 2482-2507, August 2017.
4. I. Kontoyiannis and S.P. Meyn. “On the f -norm ergodicity of Markov processes in continuous time.” *Electronic Communications in Probability*, **21**, paper 77, pp. 1–10, November 2016.
5. I. Kontoyiannis and M. Skoularidou. “Estimating the directed information and testing for causality.” *IEEE Transactions on Information Theory*, **62**, no. 11, pp. 6053–6067, November 2016.
6. I. Kontoyiannis and M. Madiman. “Sunset and inverse sunset inequalities for differential entropy and mutual information.” *IEEE Transactions on Information Theory*, **60**, no. 8, pp. 4503–4514, August 2014.
7. I. Kontoyiannis and S. Verdú. “Optimal lossless data compression: Non-asymptotics and asymptotics.” *IEEE Transactions on Information Theory*, **60**, no. 2, pp. 777–795, February 2014.
8. O. Johnson, I. Kontoyiannis and M. Madiman. “Log-concavity, ultra-log-concavity and a maximum entropy property of discrete compound Poisson measures.” *Discrete Applied Mathematics*, (Special issue, Proceedings of the Jubilee Conference on Discrete Mathematics JCDM 2009, D.J. Kleitman, A. Shastri, V.T. So’s, eds.) **161**, no. 9, pp. 1232-1250, June 2013.
9. C. Gioran and I. Kontoyiannis. “Complexity-compression tradeoffs in lossy compression via efficient random codebooks and databases.” *Problems of Information Transmission*, **48**, Issue 4, pp. 376-394, October 2012.
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12. P. Dellaportas and I. Kontoyiannis. “Control variates for estimation based on reversible Markov chain Monte Carlo samplers.” *Journal of the Royal Statistical Society: Series B*, **74**, Issue 1, pp. 133-161, January 2012.
13. P. Harremoës, O. Johnson and I. Kontoyiannis “Thinning, entropy and the law of thin numbers.” *IEEE Transactions on Information Theory*, **56**, no. 9, pp. 4228–4244, September 2010.
14. A.D. Barbour, O. Johnson, I. Kontoyiannis and M. Madiman. “Compound Poisson approximation via information functionals.” *Electronic Journal of Probability*, **15**, paper 42, pp. 1344–1369, August 2010.
15. I. Kontoyiannis. “Book review: “*Information and complexity in statistical modeling*,” by J. Rissanen, Springer, NY, 2007.” *Amer. Math. Monthly*, **115**, no. 10, pp. 956–960, December 2008.

16. I. Kontoyiannis and S.P. Meyn. “Computable exponential bounds for screened estimation and simulation.” *Annals of Applied Probability*, **18**, no. 4, pp. 1491–1518, August 2008.
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24. I. Kontoyiannis and S.P. Meyn. “Large deviations asymptotics and the spectral theory of multiplicatively regular Markov processes,” *Electronic Journal of Probability*, **10**, paper 3, pp. 61–123, February 2005.
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33. I. Kontoyiannis. “Sphere-covering, measure concentration, and source coding,” *IEEE Transactions on Information Theory*, **46**, pp. 1544–1552, May 2001.

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43. I. Kontoyiannis and Yu.M. Suhov. “Prefixes and the entropy rate for long-range sources,” Chapter 6 in *Probability Statistics and Optimization: A Tribute to Peter Whittle*, (F.P. Kelly, editor), pp. 89–98, Wiley, Chichester, 1994.

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- U1. A. Anagnostopoulos, C. Dombry, N. Guillotin-Plantard, I. Kontoyiannis and E. Upfal. “Probabilistic analysis of the k -server problem on the circle.” *arXiv online manuscript*, May 2010.
- U2. P. Dellaportas and I. Kontoyiannis. “Notes on using control variates for estimation with reversible MCMC samplers,” *arXiv online manuscript*, July 2009.
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- U4. I. Kontoyiannis. “The complexity and entropy of literary styles.” *NSF Technical Report no. 97*, Department of Statistics, Stanford University, June 1996.
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- Vol2. *Third Workshop on Information Theoretic Methods in Science and Engineering.* Proceedings. Edited by J. Heikkonen, I. Kontoyiannis, E.P. Liski, P. Myllymaki, J. Rissanen and I. Tabus. Tampere University Press, August 2010. ISBN 978-952-15-2000-6.
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- C1. “Bayesian suffix trees and context tree weighting.” **Plenary talk**, *International Zurich Seminar on Communications*, Zurich, Switzerland, February 2018.
- C2. “Simulated convergence rates with application to an intractable α -stable inference problem,” with M. Riabiz, T. Ardeshiri and S. Godsill. **Invited paper**, *2017 IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing*, Curaçao, Dutch Antilles, December 2017.
- C3. “Exact speed and transmission cost in a simple one-dimensional wireless delay-tolerant network,” with D. Cheliotis, M. Loulakis and S. Toumpis. *2017 IEEE International Symposium on Information Theory*, Aachen, Germany, June 2017.
- C4. “Exponential ergodicity in a Sobolev space,” with A.M. Devraj and S.P. Meyn. **Invited talk**, *PDE and Probability Methods for Interactions*, Sophia Antipolis, France, March 2017.
- C5. “Context trees and model selection for discrete time series.” **Invited talk**, *2016 IEEE Information Theory Workshop*, Cambridge, UK, September 2016.
- C6. “Model selection algorithms for discrete time series.” **Keynote lecture**, *11th Athens Colloquium on Algorithms & Complexity*, Athens, Greece, August 2016.
- C7. “Testing temporal causality and estimating directed information.” **Invited talk**, *Nexus of Information and Computation Theories*, Institut Henri Poincaré, Paris, France, March 2016.
- C8. “Entropy bounds on abelian groups and the Ruzsa divergence,” with M. Madiman. **Invited talk**, *2016 Information Theory and Applications Workshop*, University of California, San Diego, February 2016.
- C9. “Finding structure in data: Bayesian inference for discrete time series.” **Invited talk**, *Stochastic Methods in Finance and Physics Workshop*, Heraklion, Greece, July 2015.
- C10. “Small trees & long memory: Bayesian inference for discrete time series.” **Plenary talk**, *16th Conference of the ASMDA Intern’al Society*, Piraeus, Greece, July 2015.

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- C14. “Optimal lossless compression: Source varentropy and dispersion,” with S. Verdú. *2013 IEEE International Symposium on Information Theory*, Istanbul, Turkey, July 2013.
- C15. “Lossless compression with moderate error probability,” with Y. Altuğ and A.B. Wagner. *2013 IEEE International Symposium on Information Theory*, Istanbul, Turkey, July 2013.
- C16. “Bayesian model selection and inference for discrete time series.” **Invited talk**, *1st Workshop on Cognition and Control*, University of Florida, February 2013.
- C17. “Bayesian inference for discrete time series via tree weighting,” with M. Skoulariidou and A. Panotopoulou. **Invited paper**, *2012 IEEE Information Theory Workshop*, Lausanne, Switzerland, September 2012.
- C18. “Sunset inequalities for differential entropy and mutual information,” with M. Madiman. *2012 IEEE International Symposium on Information Theory*, M.I.T., Cambridge, MA, July 2012.
- C19. “Lossless data compression rate: Asymptotics and non-asymptotics,” with S. Verdú. **Invited paper**, *46th Annual Conference on Information Sciences and Systems*, Princeton, NJ, March 2012.
- C20. “Sunset differential entropy bounds,” with M. Madiman. **Invited talk**, *International Zurich Seminar on Communications*, Zurich, Switzerland, March 2012.
- C21. “Differential entropy sunset bounds.” **Invited talk**, *Fourth EPFL-UMLV International Workshop on Random Matrices, Information Theory and Applications*, Paris, France, December 2010.
- C22. “Markov chains and the spectra of nonlinear operators,” with S.P. Meyn. **Invited talk**, *Young Researchers in Analysis Workshop*, Athens, November 2010.
- C23. “Geometric ergodicity and the spectral gap of non-reversible Markov chains,” with Sean P. Meyn. **Invited talk**, *Fifth International Workshop on Applied Probability*, Madrid, Spain, July 2010.
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- C52. “Filtering: The case for *noisier* data,” with B. Lucena. *2005 IEEE Information Theory Workshop*, Rotorua, New Zealand, September 2005.
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- C86. “On the distribution of recurrence times and the exact asymptotics of Lempel-Ziv coding.” *1997 IEEE International Symposium on Information Theory*, Ulm, Germany, June–July 1997.

- C87. “Two refinements to Shannon’s source coding theorem.” *1997 IEEE International Symposium on Information Theory*, Ulm, Germany, June–July 1997.
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