

PUBLICATIONS

JOURNAL PAPERS

Submitted

1. R. Cavallari, S. Toumpis, R. Verdone and I. Kontoyiannis. “Packet speed and cost in mobile wireless delay-tolerant networks.” Submitted.
2. A.M. Devraj, I. Kontoyiannis and S.P. Meyn. “Geometric ergodicity in a weighted Sobolev space.” Submitted.

Published or in press

3. M. Madiman and I. Kontoyiannis. “Entropy bounds on abelian groups and the Ruzsa divergence.” *IEEE Transactions on Information Theory*, **64**, no. 1, pp. 77-92, January 2018.
4. 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.
5. 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.
6. I. Kontoyiannis and M. Skoulariidou. “Estimating the directed information and testing for causality.” *IEEE Transactions on Information Theory*, **62**, no. 11, pp. 6053–6067, November 2016.
7. 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.
8. 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.
9. 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.
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12. V. Anantharam, G. Caire, M. Costa, I. Kontoyiannis, G. Kramer, R. Yeung, and S. Verdú. “Panel on *New Perspectives on Information Theory*.” (Invited discussion.) *IEEE Information Theory Society Newsletter*, pp. 21–27, March 2012.
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16. 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.
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21. H.M. Aktulga, I. Kontoyiannis, L.A. Lyznik, L. Szpankowski, A.Y. Grama and W. Szpankowski. “Identifying statistical dependence in genomic sequences via mutual information estimates.” In *EURASIP Journal on Bioinformatics and Systems Biology*, vol. **2007**, article ID 14741, November 2007.
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24. A. Anagnostopoulos, I. Kontoyiannis, and E. Upfal. “Steady state analysis of balanced-allocation routing,” *Random Structures & Algorithms*, **26**, pp. 446–467, July 2005.
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- U1. A. Anagnostopoulos, C. Dombry, N. Guillin-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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- C1. “Deep tree models for ‘Big’ biological data.” **Invited talk**, *IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Kalamata, Greece, June 2018.
- C2. “Analysis of a one-dimensional continuous DTN model,” with D. Cheliotis, M. Loulakis and S. Toumpis. **Invited paper**, *IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Kalamata, Greece, June 2018.
- C3. “Bayesian suffix trees and context tree weighting.” **Plenary talk**, *International Zurich Seminar on Communications*, Zurich, Switzerland, February 2018.
- C4. “Small Big Data: Temporal structure in discrete time series.” **Invited talk**, *Theoretical & Algorithmic Underpinnings of Big Data Workshop*, Isaac Newton Institute, Cambridge, UK, January 2018.
- C5. “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.
- C6. “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.
- C7. “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.

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- C9. “Model selection algorithms for discrete time series.” **Keynote lecture**, *11th Athens Colloquium on Algorithms & Complexity*, Athens, Greece, August 2016.
- C10. “Testing temporal causality and estimating directed information.” **Invited talk**, *Nexus of Information and Computation Theories*, Institut Henri Poincaré, Paris, France, March 2016.
- C11. “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.
- C12. “Finding structure in data: Bayesian inference for discrete time series.” **Invited talk**, *Stochastic Methods in Finance and Physics Workshop*, Heraklion, Greece, July 2015.
- C13. “Small trees & long memory: Bayesian inference for discrete time series.” **Plenary talk**, *16th Conference of the ASMDA Intern’al Society*, Piraeus, Greece, July 2015.
- C14. “The Ruzsa divergence on groups,” with M. Madiman. **Invited paper**, *2015 Workshop on Information Theoretic Methods in Science and Engineering*, Copenhagen, Denmark, June 2015.
- C15. “Causality and directed information estimation as a hypothesis test,” with M. Skoulariidou. **Invited paper**, *2015 Workshop on Information Theoretic Methods in Science and Engineering*, Copenhagen, Denmark, June 2015.
- C16. “The entropy of sums and Ruzsa’s divergence on abelian groups,” with M. Madiman. **Invited paper**, *2013 IEEE Information Theory Workshop*, Sevilla, Spain, September 2013.
- C17. “Optimal lossless compression: Source varentropy and dispersion,” with S. Verdú. *2013 IEEE International Symposium on Information Theory*, Istanbul, Turkey, July 2013.
- C18. “Lossless compression with moderate error probability,” with Y. Altuğ and A.B. Wagner. *2013 IEEE International Symposium on Information Theory*, Istanbul, Turkey, July 2013.
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- C20. “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.
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- C23. “Sumset differential entropy bounds,” with M. Madiman. **Invited talk**, *International Zurich Seminar on Communications*, Zurich, Switzerland, March 2012.
- C24. “Differential entropy sumset bounds.” **Invited talk**, *Fourth EPFL-UMLV International Workshop on Random Matrices, Information Theory and Applications*, Paris, France, December 2010.
- C25. “Markov chains and the spectra of nonlinear operators,” with S.P. Meyn. **Invited talk**, *Young Researchers in Analysis Workshop*, Athens, November 2010.
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- C30. “Superposition codes for Gaussian vector quantization,” with K. Rahnema Rad and S. Gitzenis. **Invited paper**, *2010 IEEE Information Theory Workshop*, Cairo, Egypt, January 2010.
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- C35. “A criterion for the compound Poisson distribution to be maximum entropy,” with O. Johnson and M. Madiman. *2009 IEEE International Symposium on Information Theory*, Seoul, Korea, July 2009.
- C36. “Efficient random codebooks and databases for lossy data compression,” with C. Gioran. **Invited paper**, *2009 IEEE Information Theory Workshop*, Volos, Greece, June 2009.
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- C38. “Control variates as screening functions,” with S. Kyriazopoulou-Panagiotopoulou and S.P. Meyn. *Third International Conference on Performance Evaluation Methodologies and Tools*, Athens, Greece, October 2008.
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- C49. “Information-theoretic ideas in Poisson approximation and concentration.” **Invited series of talks**, *LMS/EPSRC Meeting on Stochastic Stability, Large Deviations and Coupling Methods*, Edinburgh, UK, September 2006.
- C50. “On estimating the rate-distortion function,” with M. Harrison. *2006 IEEE International Symposium on Information Theory*, Seattle, WA, July 2006.
- C51. “From the entropy to the statistical structure of spike trains,” with Y. Gao and E. Bienenstock. *2006 IEEE International Symposium on Information Theory*, Seattle, WA, July 2006.
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- C72. “MDL ideas in lossy data compression.” **Invited talk**, *MSRI Information Theory Workshop*, Berkeley, CA, March 2002.
- C73. “The ODE method and spectral theory of Markov operators,” with J. Huang and S.P. Meyn. **Invited paper**, *Proceedings of the Stochastic Theory and Control Workshop*, Springer, New York, pp. 205–221, B. Pasik-Duncan (Editor), 2002.
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- C82. “Model selection via rate-distortion theory.” **Invited paper**, *34th Annual Conference on Information Sciences and Systems*, Princeton, NJ, March 2000.
- C83. “Probabilistic results for sphere packing in high dimensions.” *1999 Joint Statistical Meetings of IMS-ASA-ENAR/WNAR*, Baltimore, MD, August 1999.
- C84. “How well does the Shannon codebook compress?” *1999 Canadian Information Theory Workshop*, Kingston, Ontario, June 1999.

- C85. “Asymptotically optimal lossy Lempel-Ziv coding.” *1998 IEEE International Symposium on Information Theory*, MIT, Cambridge, MA, August 1998.
- C86. “Generalized waiting times and efficient lossy coding for memoryless sources.” *1998 IEEE Information Theory Workshop*, San Diego, CA, February 1998.
- C87. “Second-order analysis of lossless and lossy versions of Lempel-Ziv codes.” **Invited paper**, *31st Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 1997.
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- C90. “Two refinements to Shannon’s source coding theorem.” *1997 IEEE International Symposium on Information Theory*, Ulm, Germany, June–July 1997.
- C91. “Progressive classification in the compressed domain for large EOS satellite databases,” with V. Castelli, C.S. Li and J.J. Turek. *1996 IEEE International Conference on Acoustics, Speech and Signal Processing*, Atlanta, GA, May 1996.
- C92. “Stationary entropy estimation via string matching,” with Yu.M. Suhov. *The Data Compression Conference DCC 96*, Snowbird, UT, April 1996.
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