

## Publication list: Gareth Roberts

- [1] Cyril Chimisov, Krzysztof Latuszynski, and Gareth Roberts. Adapting the gibbs sampler. *arXiv preprint arXiv:1801.09299*, 2018.
- [2] Cyril Chimisov, Krzysztof Latuszynski, and Gareth Roberts. Air markov chain monte carlo. *arXiv preprint arXiv:1801.09309*, 2018.
- [3] Sergios Agapiou, Gareth O Roberts, and Sebastian J Vollmer. Unbiased Monte Carlo: posterior estimation for intractable/infinite-dimensional models. *Bernoulli*, pages 1726–1786, 2018.
- [4] Paul Fearnhead, Krzysztof Latuszynski, Gareth O Roberts, and Giorgos Sermaidis. Continuous-time importance sampling: Monte carlo methods which avoid time-discretisation error. *arXiv preprint arXiv:1712.06201*, 2017.
- [5] Andi Q Wang, Martin Kolb, David Steinsaltz, and Gareth O Roberts. Theoretical properties of quasistationary monte carlo methods. *arXiv preprint arXiv:1707.08036*, 2017.
- [6] Flávio B Gonçalves, Krzysztof G Latuszyński, and Gareth O Roberts. Exact monte carlo likelihood-based inference for jump-diffusion processes. *arXiv preprint arXiv:1707.00332*, 2017.
- [7] Samuel Livingstone, Michael F Faulkner, and Gareth O Roberts. Kinetic energy choice in hamiltonian/hybrid monte carlo. *arXiv preprint arXiv:1706.02649*, 2017.
- [8] Giacomo Zanella and Gareth Roberts. Analysis of the gibbs sampler for gaussian hierarchical models via multigrid decomposition. *arXiv preprint arXiv:1703.06098*, 2017.
- [9] Philip A Ernst, Wilfrid S Kendall, Gareth O Roberts, and Jeffrey S Rosenthal. Mexit: Maximal un-coupling times for markov processes. *arXiv preprint arXiv:1702.03917*, 2017.
- [10] Joris Bierkens, Alexandre Bouchard-Côté, Arnaud Doucet, Andrew B Duncan, Paul Fearnhead, Gareth Roberts, and Sebastian J Vollmer. Piecewise deterministic markov processes for scalable monte carlo on restricted domains. *arXiv preprint arXiv:1701.04244*, 2017.
- [11] Murray Pollock, Paul Fearnhead, Adam M Johansen, and Gareth O Roberts. The scalable langevin exact algorithm: Bayesian inference for big data. *arXiv preprint arXiv:1609.03436*, 2016.
- [12] Paul Fearnhead, Joris Bierkens, Murray Pollock, and Gareth O Roberts. Piecewise deterministic Markov processes for continuous-time Monte Carlo. *arXiv preprint arXiv:1611.07873*, 2016.

- [13] Joris Bierkens, Paul Fearnhead, and Gareth Roberts. The zig-zag process and super-efficient sampling for Bayesian analysis of big data. *arXiv preprint arXiv:1607.03188*, 2016.
- [14] Alexandros Beskos, Gareth Roberts, Alexandre Thiery, and Natesh Pillai. Asymptotic analysis of the Random walk Metropolis algorithm on ridged densities. *Annals of Applied Probability*, 2017. to appear, arXiv preprint arXiv:1510.02577.
- [15] Paul J Birrell, Lorenz Wernisch, Brian D M Tom, Gareth O Roberts, Richard G Pebody, and Daniella De Angelis. Efficient real-time monitoring of an emerging influenza epidemic: how feasible? *arXiv preprint arXiv:1608.05292*, 2015.
- [16] Alain Durmus, Sylvain Le Corff, Eric Moulines, and Gareth O Roberts. Optimal scaling of the Random walk Metropolis algorithm under lp mean differentiability. *arXiv preprint arXiv:1604.06664*, *Advances in Applied Probability*, pages 1233–1260, 2017.
- [17] Alain Durmus, Gareth O Roberts, Gilles Vilmart, and Konstantinos C Zygalakis. Fast Langevin based algorithm for MCMC in high dimensions. *Annals of Applied Probability*, 2017. arXiv preprint arXiv:1507.02166.
- [18] Gareth O Roberts and Jeffrey S Rosenthal. Hitting time and convergence rate bounds for symmetric Langevin diffusions. *Methodology and Computing in Applied Probability*, 2017. to appear.
- [19] Adam Griffin, Paul A Jenkins, Gareth O Roberts, and Simon EF Spencer. Simulation from quasi-stationary distributions on reducible state spaces. *Advances in Applied Probability*, 49(3):960–980, 2017.
- [20] Joris Bierkens and Gareth Roberts. A piecewise deterministic scaling limit of Lifted Metropolis-Hastings in the Curie-Weiss model. *Annals of Applied Probability*, 27(2):846 – 882, 2017.
- [21] Omiros Papaspiliopoulos, Gareth O Roberts, and Kasia B Taylor. Exact sampling of diffusions with a discontinuity in the drift. *Advances in Applied Probability*, 48 Issue A:249–259, 2016.
- [22] Daniel Sprague, Nadine Crossland, Thomas House, Caroline Jeffery, Joseph Ouma, Gareth O Roberts, Stephen Lwanga, and Joe Valadez. Assessing delivery practices of mothers over time and over space in uganda, 2003-2011. *Emerging themes in Epidemiology*, 13(9):1–12, 2016.
- [23] Roberts GO and JS Rosenthal. Complexity bounds for MCMC via diffusion limits. *Journal of Applied Probability*, 53(2):410–420, 2016.

- [24] Adam Johansen, Murray Pollock, and Gareth O Roberts. On the exact and  $\epsilon$ -strong simulation of (jump) diffusions. *Bernoulli*, 22(2):794–856, 2016.
- [25] Gareth O Roberts and Jeffrey S Rosenthal. Surprising convergence properties of some simple Gibbs samplers under various scans. *International Journal of Statistics and Probability*, 5:51–60, 2016.
- [26] Felipe J. Medina-Aguayo, Anthony Lee, and Gareth O. Roberts. Stability of noisy Metropolis-Hastings. *Statistics and Computing*, 26(6):1187–1211, 2016. See also erratum, to appear 2017, doi:10.1007/s11222-017-9755-5.
- [27] Chris Sherlock, Alex Thiery, Gareth O Roberts, and Jeffrey S Rosenthal. On the efficiency of pseudo-marginal random walk Metropolis algorithms. *Annals of Statistics*, 43(1):238–275, 2015.
- [28] R Craiu, L Gray, K Latuszynski, N. Madras, Roberts GO, and JS Rosenthal. Stability of Adversarial Markov Chains, with an Application to Adaptive MCMC Algorithms. *Annals of Applied Probability*, 15(6):3592–3623, 2015.
- [29] D Peavoy, CLE Franzke, and GO Roberts. Systematic physics constrained parameter estimation of stochastic differential equations. *Computational Statistics and Data Analysis*, 83:182–199, 2015.
- [30] M Pollock, AM Johansen, K Łatuszyński, and GO Roberts. Discussion of “ Sequential quasi-Monte-Carlo sampling” by M. Gerber and N. Chopin. *Journal of the Royal Statistical Society, B*, (3):556–557, 2015.
- [31] Ellen Brooks-Pollock, Gareth O Roberts, and Matt J Keeling. A dynamic model of bovine Tuberculosis spread and control in Great Britain. *Nature*, 511(7508):228–231, 2014.
- [32] Galin L Jones, Gareth O Roberts, and Jeffrey S Rosenthal. Convergence of conditional Metropolis-Hastings samplers. *Advances in Applied Probability*, 46(2):422–445, 2014.
- [33] Gareth O Roberts and Jeffrey S Rosenthal. Minimising MCMC variance via diffusion limits, with an application to simulated tempering. *The Annals of Applied Probability*, 24(1):131–149, 2014.
- [34] Flávio B Gonçalves and Gareth O Roberts. Exact simulation problems for jump-diffusions. *Methodology and Computing in Applied Probability*, 16(4):907–930, 2014.
- [35] Alexandros Beskos, Natesh Pillai, Gareth Roberts, Jesus-Maria Sanz-Serna, and Andrew Stuart. Optimal tuning of the hybrid Monte Carlo algorithm. *Bernoulli*, 19(5A):1501–1534, 2013.

- [36] Krzysztof Łatuszyński, Gareth O Roberts, and Jeffrey S Rosenthal. Adaptive Gibbs samplers and related MCMC methods. *The Annals of Applied Probability*, 23(1):66–98, 2013.
- [37] C Jewell, J Brown, M Keeling, L Green, G Roberts, KIP Verheyen, C Fourichon, et al. Bayesian epidemic risk prediction-knowledge transfer and usability at all levels. In *Society for Veterinary Epidemiology and Preventive Medicine. Proceedings of a meeting held in Madrid, Spain, 20-22 March 2013.*, pages 127–142. Society for Veterinary Epidemiology and Preventive Medicine, 2013.
- [38] Giorgos Sermaidis, Omiros Papaspiliopoulos, Gareth O Roberts, Alexandros Beskos, and Paul Fearnhead. Markov chain Monte Carlo for exact inference for diffusions. *Scandinavian Journal of Statistics*, 40(2):294–321, 2013.
- [39] Omiros Papaspiliopoulos, Gareth O Roberts, and Osnat Stramer. Data augmentation for diffusions. *Journal of Computational and Graphical Statistics*, 22(3):665–688, 2013.
- [40] Gareth O Roberts and Jeffrey S Rosenthal. A note on formal constructions of sequential conditional couplings. *Statistics & Probability Letters*, 83(9):2073–2076, 2013.
- [41] SL Cotter, GO Roberts, AM Stuart, and David White. MCMC methods for functions: modifying old algorithms to make them faster. *Statistical Science*, 28(3):424–446, 2013.
- [42] Krzysztof Łatuszyński and Gareth O Roberts. CLTs and asymptotic variance of time-sampled Markov chains. *Methodology and Computing in Applied Probability*, 15(1):237–247, 2013.
- [43] Stefano Peluchetti, Gareth O Roberts, and Bruno Casella. The strong weak convergence of the quasi-EA. *Queueing Systems*, 73(4):447–460, 2013.
- [44] Omiros Papaspiliopoulos, Yvo Pokern, Gareth O Roberts, and Andrew M Stuart. Nonparametric estimation of diffusions: a differential equations approach. *Biometrika*, 99(3):511–531, 2012.
- [45] Chris P Jewell and Gareth O Roberts. Enhancing Bayesian risk prediction for epidemics using contact tracing. *Biostatistics*, 13(4):567–579, 2012.
- [46] Tristan Marshall and Gareth Roberts. An adaptive approach to Langevin MCMC. *Statistics and Computing*, 22(5):1041–1057, 2012.

- [47] Omiros Papaspiliopoulos and Gareth Roberts. Importance sampling techniques for estimation of diffusion models. *Statistical methods for stochastic differential equations*, 124:311–340, 2012.
- [48] Peter Neal, Gareth Roberts, and Wai Kong Yuen. Optimal scaling of random walk Metropolis algorithms with discontinuous target densities. *The Annals of Applied Probability*, 22(5):1880–1927, 2012.
- [49] Stefano Peluchetti and Gareth O Roberts. A study of the efficiency of exact methods for diffusion simulation. In *Monte Carlo and Quasi-Monte Carlo Methods 2010*, pages 161–187. Springer Berlin Heidelberg, 2012.
- [50] Alexandros Beskos, Stefano Peluchetti, and Gareth Roberts.  $\varepsilon$ -strong simulation of the Brownian path. *Bernoulli*, 18(4):1223–1248, 2012.
- [51] Bruno Casella, Gareth Roberts, and Osnat Stramer. Stability of partially implicit Langevin schemes and their MCMC variants. *Methodology and Computing in Applied Probability*, 13(4):835–854, 2011.
- [52] Krzysztof Łatuszynski, Gareth Roberts, Alex Thiery, and Katarzyna Wolny. Discussion of "Riemann manifold Langevin and Hamiltonian Monte Carlo methods" by Girolami M. and Calderhead B. *Journal of the Royal Statistical Society B*, 73(2):188–189, 2011.
- [53] Yves F Atchadé, Gareth O Roberts, and Jeffrey S Rosenthal. Towards optimal scaling of metropolis-coupled markov chain monte carlo. *Statistics and Computing*, 21(4):555–568, 2011.
- [54] Peter Neal and Gareth Roberts. Optimal scaling of random walk Metropolis algorithms with non-Gaussian proposals. *Methodology and Computing in Applied Probability*, 13(3):583–601, 2011.
- [55] Bruno Casella and Gareth O Roberts. Exact simulation of jump-diffusion processes with Monte Carlo applications. *Methodology and Computing in Applied Probability*, 13(3):449–473, 2011.
- [56] Krzysztof Łatuszyński, Ioannis Kosmidis, Omiros Papaspiliopoulos, and Gareth O Roberts. Simulating events of unknown probabilities via reverse time martingales. *Random Structures & Algorithms*, 38(4):441–452, 2011.
- [57] Gareth O Roberts and Jeffrey S Rosenthal. Quantitative non-geometric convergence bounds for independence samplers. *Methodology and Computing in Applied Probability*, 13(2):391–403, 2011.
- [58] Leon Danon, Ashley P Ford, Thomas House, Chris P Jewell, Matt J Keeling, Gareth O Roberts, Joshua V Ross, and Matthew C Vernon. Networks and the epidemiology of infectious disease. *Interdisciplinary perspectives on infectious diseases*, 2011, 2011.

- [59] Konstantinos Kalogeropoulos, Petros Dellaportas, and Gareth O Roberts. Likelihood-based inference for correlated diffusions. *Canadian journal of Statistics*, 39(1):52–72, 2011.
- [60] Christopher Yau, Omiros Papaspiliopoulos, Gareth O Roberts, and Christopher Holmes. Bayesian nonparametric hidden markov models with application to the analysis of copy-number-variation in mammalian genomes. *Journal of the Royal Statistical Society, series B*, 73(1):35–57, 2011.
- [61] Yan Bai, Gareth O Roberts, and Jeffrey Rosenthal. On the containment condition for adaptive Markov chain Monte Carlo algorithms. *Advances in Applied Statistics*, 21:1–54, 2011.
- [62] Omiros Papaspiliopoulos, Gareth O Roberts, and Giorgos Sermaidis. Whether tis nobler in the mind to suffer the slings and arrows of outrageous mixing problems, or to take arms against a sea of troubles, and by opposing end them? *Journal of Computational and Graphical Statistics*, 20(3), 2011.
- [63] Kasper K Berthelsen, Laird A Breyer, and Gareth O Roberts. Perfect posterior simulation for mixture and hidden Markov models. *LMS Journal of Computation and Mathematics*, 13:246–259, 2010.
- [64] A Beskos, NS Pillai, GO Roberts, JM Sanz-Serna, AM Stuart, Theodore E Simos, George Psihoyios, and Ch Tsitouras. The acceptance probability of the Hybrid Monte Carlo method in high-dimensional problems. *Aip Conference Proceedings*, 1281(1):23, 2010.
- [65] Paul Fearnhead, Omiros Papaspiliopoulos, Gareth O Roberts, and Andrew Stuart. Random-weight particle filtering of continuous time processes. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 72(4):497–512, 2010.
- [66] Chris Sherlock, Paul Fearnhead, and Gareth O Roberts. The random walk Metropolis: linking theory and practice through a case study. *Statistical Science*, pages 172–190, 2010.
- [67] Konstantinos Kalogeropoulos, Gareth O Roberts, and Petros Dellaportas. Inference for stochastic volatility models using time change transformations. *The Annals of Statistics*, pages 784–807, 2010.
- [68] Gareth O Roberts and Laura M Sangalli. Latent diffusion models for survival analysis. *Bernoulli*, 16(2):435–458, 2010.
- [69] Chris P Jewell, Matthew James Keeling, and Gareth O Roberts. Predicting undetected infections during the 2007 foot-and-mouth disease outbreak. *Journal of the Royal Society Interface*, 6(41):1145–1151, 2009.

- [70] Chris P Jewell, Theodore Kypraios, RM Christley, and Gareth O Roberts. A novel approach to real-time risk prediction for emerging infectious diseases: a case study in avian influenza h5n1. *Preventive veterinary medicine*, 91(1):19–28, 2009.
- [71] Christophe Andrieu and Gareth O Roberts. The pseudo-marginal approach for efficient Monte Carlo computations. *The Annals of Statistics*, pages 697–725, 2009.
- [72] Alexandros Beskos, Omiros Papaspiliopoulos, and Gareth Roberts. Monte carlo maximum likelihood estimation for discretely observed diffusion processes. *The Annals of Statistics*, pages 223–245, 2009.
- [73] Chris Sherlock and Gareth Roberts. Optimal scaling of the random walk Metropolis on elliptically symmetric unimodal targets. *Bernoulli*, 15(3):774–798, 2009.
- [74] Chris P Jewell, Theodore Kypraios, Peter Neal, and Gareth O Roberts. Bayesian analysis for emerging infectious diseases. *Bayesian Analysis*, 4(3):465–496, 2009.
- [75] Alex Beskos, Gareth O Roberts, and Stuart Andrew M. Optimal scalings for local Metropolis-Hastings chains on non-product targets in high dimensions. *Annals of Applied Probability*, 19(3):863–898, 2009.
- [76] Gareth O Roberts and Jeffrey S Rosenthal. Examples of adaptive MCMC. *Journal of Computational and Graphical Statistics*, 18(2):349–367, 2009.
- [77] Alexandros Beskos, Omiros Papaspiliopoulos, and Gareth O Roberts. A factorisation of diffusion measure and finite sample path constructions. *Methodology and Computing in Applied Probability*, 10(1):85–104, 2008.
- [78] Omiros Papaspiliopoulos and Gareth O Roberts. Retrospective Markov chain Monte Carlo methods for Dirichlet process hierarchical models. *Biometrika*, 95(1):169–186, 2008.
- [79] Omiros Papaspiliopoulos and Gareth Roberts. Stability of the Gibbs sampler for Bayesian hierarchical models. *The Annals of Statistics*, pages 95–117, 2008.
- [80] Gareth O Roberts, Jeffrey S Rosenthal, et al. Two convergence properties of hybrid samplers. *The Annals of Applied Probability*, 8(2):397–407, 1998.
- [81] Alexandros Beskos, Gareth Roberts, Andrew Stuart, and Jochen Voss. MCMC methods for diffusion bridges. *Stochastics and Dynamics*, 8(03):319–350, 2008.

- [82] Paul Fearnhead, Omiros Papaspiliopoulos, and Gareth O Roberts. Particle filters for partially observed diffusions. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 70(4):755–777, 2008.
- [83] Peter Neal and Gareth Roberts. Optimal scaling for random walk metropolis on spherically constrained target densities. *Methodology and Computing in Applied Probability*, 10(2):277–297, 2008.
- [84] Gareth O Roberts and Jeffrey S Rosenthal. Variance bounding Markov chains. *The Annals of Applied Probability*, pages 1201–1214, 2008.
- [85] Bruno Casella and Gareth O Roberts. Exact Monte Carlo simulation of killed diffusions. *Advances in Applied Probability*, pages 273–291, 2008.
- [86] Søren F Jarner and Gareth O Roberts. Convergence of Heavy-tailed Monte Carlo Markov Chain Algorithms. *Scandinavian Journal of Statistics*, 34(4):781–815, 2007.
- [87] Osnat Stramer and Gareth O Roberts. On Bayesian analysis of nonlinear continuous-time autoregression models. *Journal of Time Series Analysis*, 28(5):744–762, 2007.
- [88] Gareth O Roberts and Jeffrey S Rosenthal. Coupling and ergodicity of adaptive Markov chain Monte Carlo algorithms. *Journal of Applied Probability*, 44:458–475, 2007.
- [89] Omiros Papaspiliopoulos, Gareth O Roberts, and Martin Sköld. A general framework for the parametrisation of hierarchical models. *Statistical Science*, 22:59–73, 2007.
- [90] Antonio M Pievatolo, GO Roberts, and B Sansò, editors. *Bayesian Inference for Stochastic Processes*. Elsevier Science, 2007.
- [91] Gareth O Roberts, Jeffrey S Rosenthal, Johan Segers, and Bruno Sousa. Extremal indices, geometric ergodicity of Markov chains, and MCMC. *Extremes*, 9(3-4):213–229, 2006. (*erratum* 13, 3, 373-374, 2000).
- [92] Petros Dellaportas, Nial Friel, and Gareth O Roberts. Bayesian model selection for partially observed diffusion models. *Biometrika*, 93(4):809–825, 2006.
- [93] Alexandros Beskos, Omiros Papaspiliopoulos, and Gareth O Roberts. Retrospective exact simulation of diffusion sample paths with applications. *Bernoulli*, 12(6):1077–1098, 2006.
- [94] Gareth O Roberts and Jeffrey S Rosenthal. Harris recurrence of Metropolis-within-Gibbs and trans-dimensional Markov chains. *The Annals of Applied Probability*, 16:2123–2139, 2006.

- [95] Paul Fearnhead, Omiros Papaspiliopoulos, and Gareth O Roberts. Particle filtering for diffusions avoiding time-discretisations. In *Nonlinear Statistical Signal Processing Workshop, 2006 IEEE*, pages 141–143. IEEE, 2006.
- [96] Alexandros Beskos, Omiros Papaspiliopoulos, Gareth O Roberts, and Paul Fearnhead. Exact and computationally efficient likelihood-based estimation for discretely observed diffusion processes (with discussion). *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 68(3):333–382, 2006.
- [97] Ole F Christensen, Gareth O Roberts, and Martin Sköld. Robust Markov chain Monte Carlo methods for spatial generalised linear mixed models. *Journal of Computational and Graphical Statistics*, 15(1):1–17, 2006.
- [98] Peter Neal and Gareth Roberts. Optimal scaling for partially updating MCMC algorithms. *The Annals of Applied Probability*, 16(2):475–515, 2006.
- [99] Alexandros Beskos and Gareth O Roberts. One-shot CFTP; application to a class of truncated Gaussian densities. *Methodology and Computing in Applied Probability*, 7(4):407–437, 2005.
- [100] Ole F Christensen, Gareth O Roberts, and Jeffrey S Rosenthal. Scaling limits for the transient phase of local Metropolis–Hastings algorithms. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 67(2):253–268, 2005.
- [101] Allan Borodin, Gareth O Roberts, Jeffrey S Rosenthal, and Panayiotis Tsaparas. Link analysis ranking: algorithms, theory, and experiments. *ACM Transactions on Internet Technology (TOIT)*, 5(1):231–297, 2005.
- [102] G Fort and GO Roberts. Subgeometric ergodicity of strong Markov processes. *The Annals of Applied Probability*, 15(2):1565–1589, 2005.
- [103] Peter Neal and Gareth Roberts. A case study in non-centering for data augmentation: stochastic epidemics. *Statistics and Computing*, 15(4):315–327, 2005.
- [104] Alexandros Beskos and Gareth O Roberts. Exact simulation of diffusions. *The Annals of Applied Probability*, 15(4):2422–2444, 2005.
- [105] Gareth O Roberts and Jeffrey S Rosenthal. General state space Markov chains and MCMC algorithms. *Probability Surveys*, 1:20–71, 2004.
- [106] Gareth O Roberts, Omiros Papaspiliopoulos, and Petros Dellaportas. Bayesian inference for non-Gaussian Ornstein–Uhlenbeck stochastic volatility processes. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 66(2):369–393, 2004.

- [107] Peter J Neal and Gareth O Roberts. Statistical inference and model selection for the 1861 Hagelloch measles epidemic. *Biostatistics*, 5(2):249–261, 2004.
- [108] Gareth O Roberts and Jeffrey S Rosenthal. Combinatorial identities associated with CFTP. *Far East Journal of Mathematical Sciences*, 13:391–404, 2004.
- [109] Gareth O Roberts and Jeffrey S Rosenthal. Downweighting tightly knit communities in world wide web rankings. *Advances and Applications in Statistics (ADAS)*, 3:199–216, 2003.
- [110] Papaspiliopoulos Omiros, Gareth O Roberts, and Martin Skold. Non-centered parameterisations for hierarchical models and data augmentation. *Bayesian Statistics 7: Proceedings of the Seventh Valencia International Meeting*, pages 307–327, 2003.
- [111] G Fort, E Moulines, GO Roberts, and JS Rosenthal. On the geometric ergodicity of hybrid samplers. *Journal of Applied Probability*, pages 123–146, 2003.
- [112] Petros Dellaportas, Paolo Giudici, and Gareth Roberts. Bayesian inference for nondecomposable graphical Gaussian models. *Sankhyā: Series A*, 65:43–55, 2003.
- [113] William TM Dunsmuir, Sean P Meyn, and Gareth O Roberts. Richard tweedie, 1947-2001. *The Statistician*, pages 102–104, 2003.
- [114] Gareth O Roberts. Linking theory and practice of MCMC (with discussion by CP Robert and A Frigessi). In Peter Green, Niels J Hjort, and Sylvia Richardson, editors, *Highly Structured Stochastic Systems*, pages 145–178. Oxford University Press, 2003.
- [115] Petros Dellaportas and Gareth O Roberts. An introduction to MCMC. In *Spatial statistics and computational methods*, pages 1–41. Springer New York, 2003.
- [116] Stephen P Brooks, Paulo Giudici, and Gareth O Roberts. Efficient construction of reversible jump Markov chain Monte Carlo proposal distributions. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 65(1):3–39, 2003.
- [117] Gareth O Roberts and Martin Skold. Kernel density estimates from MCMC output. *Scandinavian Journal of Statistics*, 30:699–718, 2003.
- [118] Gareth O Roberts and Osnat Stramer. Langevin diffusions and Metropolis-Hastings algorithms. *Methodology and computing in applied probability*, 4(4):337–357, 2002.

- [119] Gareth O Roberts and Jeffrey S Rosenthal. One-shot coupling for certain stochastic recursive sequences. *Stochastic processes and their applications*, 99(2):195–208, 2002.
- [120] Gareth O Roberts and Jeffrey S Rosenthal. The polar slice sampler. *Stochastic Models*, 18(2):257–280, 2002.
- [121] Violet SF Lo, Gareth O Roberts, and Henry E Daniels. Inverse method of images. *Bernoulli*, pages 53–80, 2002.
- [122] Søren F Jarner and Gareth O Roberts. Polynomial convergence rates of Markov chains. *Annals of Applied Probability*, pages 224–247, 2002.
- [123] LA Breyer and GO Roberts. A new method for coupling random fields. *LMS Journal of Computation and Mathematics*, 5:77–94, 2002.
- [124] Gareth O Roberts and Osnat Stramer. On inference for partially observed nonlinear diffusion models using the Metropolis–Hastings algorithm. *Biometrika*, 88(3):603–621, 2001.
- [125] Gareth O Roberts and Jeffrey S Rosenthal. Markov Chains and de-initialising processes. *Scandinavian Journal of Statistics*, 28(3):489–504, 2001.
- [126] Laird Breyer, Gareth O Roberts, and Jeffrey S Rosenthal. A note on geometric ergodicity and floating-point roundoff error. *Statistics & probability letters*, 53(2):123–127, 2001.
- [127] Gareth O Roberts and Sujit K Sahu. Approximate predetermined convergence properties of the Gibbs sampler. *Journal of Computational and Graphical Statistics*, 10(2):216–229, 2001.
- [128] John C Liechty and Gareth O Roberts. Markov chain Monte Carlo methods for switching diffusion models. *Biometrika*, 88(2):299–315, 2001.
- [129] Laird A Breyer and GO Roberts. Catalytic perfect simulation. *Methodology and Computing in Applied Probability*, 3(2):161–177, 2001.
- [130] Gareth O Roberts and Jeffrey S Rosenthal. Small and pseudo-small sets for Markov chains. *Stochastic Models*, 17(2):121–145, 2001.
- [131] Allan Borodin, Gareth O Roberts, Jeffrey S Rosenthal, and Panayiotis Tsaparas. Finding authorities and hubs from link structures on the world wide web. In *Proceedings of the 10th international conference on World Wide Web*, pages 415–429. ACM, 2001.
- [132] Gareth O Roberts and Jeffrey S Rosenthal. Bayesian models with infinite hierarchies. *Bernoulli*, 7:453–471, 2001.

- [133] Gareth O Roberts and Omiros Papaspiliopoulos. Invited vote of thanks for Non-Gaussian Ornstein-Uhlenbeck-based Models and some of their uses in Financial Economics. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 63:209–213, 2001.
- [134] Gareth O Roberts and Richard L Tweedie. Geometric  $L^2$  and  $L^1$  convergence are equivalent for reversible Markov chains. *Journal of Applied Probability*, pages 37–41, 2001.
- [135] Antonietta Mira, Jesper Møller, and Gareth O Roberts. Perfect slice samplers. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 63(3):593–606, 2001. (erratum: 64, 3, 581, 2002).
- [136] Gareth O Roberts and Jeffrey S Rosenthal. Optimal scaling for various Metropolis-Hastings algorithms. *Statistical science*, 16(4):351–367, 2001.
- [137] Laird A Breyer and Gareth O Roberts. From Metropolis to diffusions: Gibbs states and optimal scaling. *Stochastic Processes and their Applications*, 90(2):181–206, 2000.
- [138] SFV Lo and Gareth O Roberts. Smooth taboo density for one-dimensional diffusions. *Journal of the London Mathematical Society*, 62(3):951–960, 2000.
- [139] Gareth O Roberts, S Petrone, and Jeffrey S Rosenthal. Rates of convergence for Markov chains associated with Dirichlet processes. *Far East Journal of Theoretical Statistics*, 4(2):207–236, 2000.
- [140] Gareth O Roberts and Jeffrey S Rosenthal. Recent progress on computable bounds and the simple slice sampler. In Neal Madras, editor, *Fields Institute Communications, 26, Monte Carlo methods (1998)*, pages 123–130. Fields Institute, Toronto, Canada, 2000.
- [141] GO Roberts and RL Tweedie. Rates of convergence of stochastically monotone and  $x$  time markov models. *Journal of applied probability*, 37(2):359–373, 2000.
- [142] Patrick E Brown, Gareth O Roberts, Kjetil F Kåresen, and Stefano Tonellato. Blur-generated non-separable space-time models. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 62(4):847–860, 2000.
- [143] LA Breyer and GO Roberts. A quasi-ergodic theorem for evanescent processes. *Stochastic processes and their applications*, 84(2):177–186, 1999.
- [144] Gareth O Roberts. A note on acceptance rate criteria for CLTs for Metropolis-Hastings algorithms. *Journal of Applied Probability*, 36:1210–1217, 1999.

- [145] SP Brooks and GO Roberts. On quantile estimation and Markov chain Monte Carlo convergence. *Biometrika*, 86(3):710–717, 1999.
- [146] Mary Kathryn Cowles, Gareth O Roberts, and Jeffrey S Rosenthal. Possible biases induced by MCMC convergence diagnostics. *Journal of Statistical Computation and Simulation*, 64(1):87–104, 1999.
- [147] Sujit K Sahu and Gareth O Roberts. On convergence of the EM algorithm and the Gibbs sampler. *Statistics and Computing*, 9(1):55–64, 1999.
- [148] Gareth O Roberts and Richard L Tweedie. Bounds on regeneration times and convergence rates for Markov chains. *Stochastic Processes and their applications*, 80(2):211–229, 1999, (erratum: 91, 337–338, 2001).
- [149] Gareth O Roberts and Jeffrey S Rosenthal. Convergence of slice sampler Markov chains. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 61(3):643–660, 1999.
- [150] Philip D O'Neill and Gareth O Roberts. Bayesian inference for partially observed stochastic epidemics. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 162(1):121–129, 1999.
- [151] Gareth O Roberts and Jeffrey S Rosenthal. On convergence rates of Gibbs samplers for uniform distributions. *Annals of Applied Probability*, pages 1291–1302, 1998.
- [152] Walter R Gilks, Gareth O Roberts, and Sujit K Sahu. Adaptive Markov chain Monte Carlo through regeneration. *Journal of the American statistical association*, 93(443):1045–1054, 1998.
- [153] Gareth O Roberts, Jeffrey S Rosenthal, and Peter O Schwartz. Convergence properties of perturbed Markov chains. *Journal of applied probability*, pages 1–11, 1998.
- [154] Gareth O Roberts and Jeffrey S Rosenthal. Markov chain Monte Carlo: Some practical implications of theoretical results. *Canadian Journal of Statistics*, 26(1):5–20, 1998.
- [155] Gareth O Roberts. Optimal Metropolis algorithms for product measures on the vertices of a hypercube. *Stochastics and Stochastic Reports*, 62(3-4):275–283, 1998.
- [156] Gareth O Roberts and Jeffrey S Rosenthal. Optimal scaling of discrete approximations to Langevin diffusions. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 60(1):255–268, 1998.
- [157] Stephen P Brooks and Gareth O Roberts. Assessing convergence of Markov chain Monte Carlo algorithms. *Statistics and Computing*, 8(4):319–335, 1998.

- [158] Steve P Brooks, Petros Dellaportas, and Gareth O Roberts. An approach to diagnosing total variation convergence of MCMC algorithms. *Journal of Computational and Graphical Statistics*, 6(3):251–265, 1997.
- [159] Gareth O Roberts and Jeffrey S Rosenthal. Geometric ergodicity and hybrid Markov chains. *Electron. Comm. Probab*, 2(2):13–25, 1997.
- [160] SD Jacka and GO Roberts. On strong forms of weak convergence. *Stochastic processes and their applications*, 67(1):41–53, 1997.
- [161] GO Roberts, SD Jacka, and PK Pollett. Non-explosivity of limits of conditioned birth and death processes. *Journal of Applied Probability*, 34(1):35–45, 1997.
- [162] GO Roberts and SK Sahu. Discussion of “The EM Algorithm: an old folk song sung to a fast new tune” by Meng and van Dyk. *Journal of the Royal Statistical Society, Series B*, 59(3):558–559, 1997.
- [163] Gareth O Roberts and Jeffrey S Rosenthal. Shift-coupling and convergence rates of ergodic averages. *Stochastic Models*, 13(1):147–165, 1997.
- [164] GO Roberts and CF Shortland. Pricing barrier options with time-dependent coefficients. *Mathematical Finance*, 7(1):83–93, 1997.
- [165] Gareth O Roberts and Sujit K Sahu. Updating schemes, correlation structure, blocking and parameterization for the Gibbs sampler. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 59(2):291–317, 1997.
- [166] Gareth O Roberts, Andrew Gelman, and Walter R Gilks. Weak convergence and optimal scaling of random walk Metropolis algorithms. *The Annals of Applied Probability*, 7(1):110–120, 1997.
- [167] Gareth O Roberts and Jeffrey S Rosenthal. Quantitative bounds for convergence rates for continuous time markov processes. *Electronic Journal of Probability*, 1(9), 1996.
- [168] Gareth O Roberts and Richard L Tweedie. Exponential convergence of Langevin distributions and their discrete approximations. *Bernoulli*, pages 341–363, 1996.
- [169] Gareth O Roberts and Richard L Tweedie. Geometric convergence and central limit theorems for multidimensional Hastings and Metropolis algorithms. *Biometrika*, 83(1):95–110, 1996.
- [170] GO Roberts. Methods for Estimating  $L^2$  Convergence of Markov Chain-Monte Carlo Techniques. *Bayesian Analysis in Statistics and Econometrics: Essays in Honor of Arnold Zellner*, 309:373, 1996.

- [171] Walter R Gilks and Gareth O Roberts. Strategies for improving MCMC. In *Markov chain Monte Carlo in practice*, pages 89–114. Springer US, 1996.
- [172] Gareth O Roberts. Markov chain concepts related to sampling algorithms. In *Markov chain Monte Carlo in practice*, pages 45–57. Springer US, 1996.
- [173] A Gelman, G Roberts, and W Gilks. Efficient Metropolis jumping rules. *Bayesian statistics*, 5:599–608, 1996.
- [174] SD Jacka and GO Roberts. Weak convergence of conditioned processes on a countable state space. *Journal of applied probability*, pages 902–916, 1995.
- [175] GO Roberts and CF Shortland. The hazard rate tangent approximation for boundary hitting times. *The Annals of Applied Probability*, pages 446–460, 1995.
- [176] GO Roberts, SK Sahu, and WR Gilks. Comment on “Bayesian Computation and Stochastic Systems” by J Besag, PJ Green, D Higdon and K Mengersen. *Statistical science*, pages 49–51, 1995.
- [177] GO Roberts and WR Gilks. Convergence of adaptive direction sampling. *Journal of multivariate analysis*, 49(2):287–298, 1994.
- [178] Gareth O Roberts. Hot papers in statistics “bayesian computation via the Gibbs sampler and related Markov chain Monte Carlo methods” by Smith, AFM, and Roberts, GO. *Scientist*, 8(21):16–16, 1994.
- [179] GO Roberts and SD Jacka. Weak convergence of conditioned birth and death processes. *Journal of Applied Probability*, 31:90–100, 1994.
- [180] Nicholas G Polson and Gareth O Roberts. Bayes factors for discrete observations from diffusion processes. *Biometrika*, 81(1):11–26, 1994.
- [181] Gareth O Roberts and Adrian FM Smith. Simple conditions for the convergence of the Gibbs sampler and Metropolis-Hastings algorithms. *Stochastic processes and their applications*, 49(2):207–216, 1994.
- [182] Gareth O Roberts. Efficient Simulation from the Random-Walk Metropolis Algorithms. *Computing Science and Statistics*, pages 482–482, 1994.
- [183] Gareth O Roberts and Nicholas G Polson. On the geometric convergence of the Gibbs sampler. *Journal of the Royal Statistical Society. Series B (Methodological)*, 56:377–384, 1994.
- [184] Walter R Gilks, Gareth O Roberts, and Edward I George. Adaptive direction sampling. *The statistician*, 43(1):179–189, 1994.

- [185] Nicholas G Polson and Gareth O Roberts. A utility based approach to information for stochastic differential equations. *Stochastic processes and their applications*, 48(2):341–356, 1993.
- [186] Adrian FM Smith and Gareth O Roberts. Bayesian computation via the Gibbs sampler and related Markov chain Monte Carlo methods. *Journal of the Royal Statistical Society. Series B (Methodological)*, 55:3–23, 1993.
- [187] Gareth O Roberts. Convergence diagnostics for the Gibbs sampler. *Bayesian statistics*, 4:775–782, 1992.
- [188] GO Roberts. A comparison theorem for conditioned Markov processes. *Journal of applied probability*, 28:74–83, 1991.
- [189] GO Roberts. Asymptotic approximations for Brownian motion boundary hitting times. *The Annals of Probability*, 19:1689–1731, 1991.
- [190] Nicholas G Polson and Gareth O Roberts. A Bayesian decision theoretic characterization of Poisson processes. *Journal of the Royal Statistical Society. Series B (Methodological)*, 53:675–682, 1991.
- [191] Gareth Roberts. Boundary Hitting Approximations for Markov Processes. *Diffusion Processes and Related Problems in Analysis: Diffusions in analysis and geometry*, 1:83–94, 1990.