

July 28, 2009

Charles J. Geyer  
Professor  
School of Statistics  
University of Minnesota  
270A Vincent Hall  
206 Church St. S. E.  
Minneapolis, MN 55455  
(612) 625-8511  
charlie@stat.umn.edu

Degrees:

BS 1972 (physics), Hampden-Sydney College

MS 1988 (statistics), PhD 1990 (statistics), University of Washington

Academic Experience:

University of Washington, Department of Statistics. Teaching Assistant, Research Assistant, and Instructor, 1986-1990.

University of Chicago, Department of Statistics. NSF Postdoctoral Fellow, 1990-1991.

University of Minnesota, School of Statistics. Assistant Professor, 1990-1995. Associate Professor, 1995-2000. Professor, since 2000.

Thesis Advisor: Elizabeth A. Thompson

Honors: The paper Shaw, Geyer, Wagenius, Hangelbroek, and Etersson (2007) has been given the 2009 Presidential Award of the American Society of Naturalists. This award is for the best paper published in *The American Naturalist* during the calendar year preceding the President's term of office.

Publications:

Geyer, C. J. and Thompson, E. A. (1988). Gene survival in the Asian wild horse (*Equus przewalskii*): I. Dependence of gene survival in the Calgary breeding group pedigree. *Zoo Biology*, **7**, 313–327.

Geyer, C. J., Thompson, E. A. and Ryder, O. A. (1989). Gene survival in the Asian wild horse (*Equus przewalskii*) II. Gene survival in the whole population, in subgroups, and through history. *Zoo Biology* **8**, 313–329.

Geyer, C. J. (1991). Constrained maximum likelihood exemplified by isotonic convex logistic regression. *J. Amer. Statist. Assoc.*, **86**, 717–724.

Geyer, C. J. and Thompson, E. A. (1992). Constrained Monte Carlo maximum likelihood for dependent data, (with discussion). *J. Roy. Statist. Soc. Ser. B*, **54** 657–699.

- Lin, D. Y. and Geyer C. J. (1992). Computational methods for semiparametric linear regression with censored data. *J. Comput. Graph. Statist.*, **1** 77–90.
- Geyer, C. J. (1992). Practical Markov chain Monte Carlo (with discussion). *Statist. Sci.*, **7** 473–511.
- Geyer, C. J. (1993). Discussion on the meeting on the Gibbs Sampler and other Monte Carlo methods. *J. Roy. Statist. Soc. Ser. B*, **55** 74–75.
- Geyer, C. J., Ryder, O. A., Chemnick, L. G. and Thompson, E. A. (1993). Analysis of relatedness in the California condors from DNA fingerprints. *Molecular Biology and Evolution*, **10** 571–589.
- Geyer, C. J. (1994). On the convergence of Monte Carlo maximum likelihood calculations. *J. Roy. Statist. Soc. Ser. B*, **56** 261–274.
- Newton, M. A. and Geyer, C. J. (1994). Bootstrap recycling: A Monte Carlo algorithm for the nested bootstrap. *J. Amer. Statist. Assoc.*, **89** 905–912.
- Gentleman, R. and Geyer, C. J. (1994). Maximum likelihood for interval-censored data: Computation and consistency. *Biometrika*, **81** 618–623.
- Geyer, C. J. and Møller, J. (1994). Simulation procedures and likelihood inference for spatial point processes. *Scand. J. Statist.*, **21** 359–373.
- Geyer, C. J. (1994). On the Asymptotics of Constrained M-Estimation. *Ann. Statist.*, **22** 1993–2010.
- Chan, K. S. and Geyer, C. J. (1994). Discussion of the paper by Tierney. *Ann. Statist.*, **22** 1747–1758.
- Geyer, C. J. (1995). Conditioning in Markov chain Monte Carlo. *J. Comput. Graph. Statist.*, **4** 2031–2050.
- Geyer, C. J. and Thompson, E. A. (1995). Annealing Markov chain Monte Carlo with applications to ancestral inference. *J. Amer. Statist. Assoc.*, **90** 909–920.
- Geyer, C. J. (1995). Discussion of the paper “Bayesian Computation and Stochastic Systems” by Julian Besag, Peter Green, David Higdon and Kerrie Mengersen. *Statist. Sci.*, **10** 46–48.
- Geyer, C. J. and Tierney, L. (1995). On the convergence of Monte Carlo approximations to the posterior density. In *Bayesian Statistics and Econometrics: Essays in Honor of Arnold Zellner*, eds. D. Berry, K. M. Chaloner, and J. K. Geweke, New York: Wiley, 389–396.

- Geyer, C. J. (1996). Estimation and Optimization of Functions. In *Markov Chain Monte Carlo in Practice*, eds. W. R. Gilks, S. Richardson, and D. J. Spiegelhalter, London: Chapman and Hall, 241–258.
- Geyer, C. J. (1996). Discussion of the paper by Dr. Walley. *J. Roy. Statist. Soc. Ser. B*, **58** 40–41.
- Valberg, S. J., Geyer, C., Sorum, S. A., and Cardinet, G. H., III. (1996). Familial Incidence of Exertional Rhabdomyolysis in Quarter Horse-related breeds. *American Journal of Veterinary Research* **57** 286–290.
- Shaw, F. H. and Geyer, C. J. (1997). Estimation and testing in constrained covariance component models. *Biometrika* **84** 95–102.
- Meeden, G., Geyer, C., Lang, J. and Funo, E. (1998). The admissibility of the maximum likelihood estimator for decomposable log-linear interaction models for contingency tables. *Communications in Statistics–Theory and Methods* **27** 473–494.
- Hobert, J. P. and Geyer, C. J. (1998). Geometric ergodicity of Gibbs and block Gibbs samplers for a hierarchical random effects model. *Journal of Multivariate Analysis* **67** 414–430.
- Geyer, C. J. (1999). Likelihood Inference for Spatial Point Processes. In *Stochastic Geometry: Likelihood and Computation*, eds. W. Kendall, O. Barndorff-Nielsen and M. N. M. van Lieshout, London: Chapman and Hall/CRC, 141–172.
- Chen, L. S., Geisser, S. and Geyer, C. J. (1999). Monte Carlo Minimization for One-Step Ahead Sequential Control. In *Diagnosis and Prediction*, IMA Vol. 114, 109–129.
- Shaw, F. H., Promislow, D. E. L., Tatar, M., Hughes, K. A. and Geyer, C. J. (1999). Towards reconciling inferences concerning genetic variation in senescence. *Genetics* **152** 553–566.
- Pletcher, S. D. and Geyer, C. J. (1999). The genetic analysis of age-dependent traits: modeling the character process. *Genetics* **153** 825–835.
- MacLeay, J. M., Valberg, S. J., Geyer, C. J., Sorum, S. A., and Sorum, M. D. (1999). Heritable basis for recurrent exertional rhabdomyolysis in thoroughbred racehorses. *American Journal of Veterinary Research* **60** 250–256.
- Shaw, F. H., Geyer, C. J., and Shaw, R. G. (2002). A Comprehensive Model of Mutations Affecting Fitness and Inferences for *Arabidopsis thaliana* *Evolution* **56** 453–463.
- Shaw, R. G., Shaw, F. H., and Geyer, C. J. (2003). What fraction of mutations reduce fitness: A reply to Keightley and Lynch. *Evolution* **57** 686–689.

Geyer, C. J. and Meeden, G. D. (2005). Fuzzy and Randomized Confidence Intervals and P-values (with discussion). *Statistical Science* **20** 358–387.

Geyer, C. J. (2005). Discussion on the paper by Baddeley et al. *J. Roy. Statist. Soc. Ser. B*, **67** 660.

Sung, Y. J. and Geyer, C. J. (2007). Monte Carlo Likelihood Inference for Missing Data Models. <http://www.stat.umn.edu/geyer/bernor/>. *Annals of Statistics* **35** 990–1011.

Thompson, E. A. and Geyer, C. J. (2007). Fuzzy P-values in Latent Variable Problems. *Biometrika* **94** 49–60.

Geyer, C. J., Wagenius, S., and Shaw, R. G. (2007). Aster Models for Life History Analysis. <http://www.stat.umn.edu/geyer/aster/>. *Biometrika* **94** 415–426.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Etterson, J. R. (2007). Unifying Life History Analysis for Inference of Fitness and population growth. *American Naturalist* **172** E35–E47. (e-paper <http://www.journals.uchicago.edu/doi/full/10.1086/588063>)

Geyer, C. J. (2009). Likelihood Inference in Exponential Families and Directions of Recession *Electronic Journal of Statistics*, **3**, 259–289.

Wu, S., Shen, X., and Geyer, C. J. Adaptive Regularization through Entire Solution Surface. To appear in *Biometrika*.

Submitted:

(none).

In Revision:

Geyer, C. J. (2005). Le Cam Made Simple: Asymptotics of Maximum Likelihood without the LLN or CLT or Sample Size Going to Infinity <http://www.stat.umn.edu/geyer/lecam/>. Was TR 643. Currently in revision.

Geyer, C. J. (2005). Fuzzy  $P$ -values and Ties in Nonparametric Tests. <http://www.stat.umn.edu/geyer/fuzz/geytie.html>.

Technical Reports and Conference Proceedings:

Geyer, C. J. (1988). Software for calculating gene survival and multigene descent probabilities and for pedigree manipulation and drawing. Technical Report 153, Department of Statistics, University of Washington.

Geyer, C. J. and Thompson, E. A. (1990). Three papers on maximum likelihood in exponential families. Technical Report 188, Department of Statistics, University of Washington.

Geyer, C. J. (1991). Markov chain Monte Carlo maximum likelihood. *Computing Science and Statistics: Proc. 23rd Symp. Interface*, 156–163.

Geyer, C. J. (1991). Estimating Normalizing Constants and Reweighting Mixtures in Markov Chain Monte Carlo. Technical Report No. 568. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/~charlie/PAPERS/tr568.html>.

Geyer, C. J. and Thompson, E. A. (1995). A new approach to the joint estimation of relationship from DNA fingerprint data. In *Population Management for Survival and Recovery: Analytical Methods and Strategies in Small Population Conservation*. eds. J. D. Ballou, M. Gilpin, T. J. Foose, 245–260. New York: Columbia University Press.

Avise J. C., Haig, S. M., Ryder, O. A., Lynch, M., and Geyer, C. J. (1995). Descriptive genetic studies: applications in population management and conservation biology. In *Population Management for Survival and Recovery: Analytical Methods and Strategies in Small Population Conservation*. eds. J. D. Ballou, M. Gilpin, T. J. Foose, New York: Columbia University Press, 183–244.

Mira, A. and Geyer, C. J. (2000). On non-reversible Markov chains. In Madras, N. (ed.) *Monte Carlo Methods* Fields Institute Communications, Fields Institute, Toronto, Canada.

Geyer, C. J. (2005). Le Cam Made Simple: Asymptotics of Maximum Likelihood without the LLN or CLT or Sample Size Going to Infinity. Technical Report No. 643 (revised). School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/lecam/>.

Thompson, E. A. and Geyer, C. J. (2005). Fuzzy P-values in Latent Variable Problems. Technical Report No. 481. Department of Statistics, University of Washington. <http://www.stat.umn.edu/geyer/fuzz/geytho.html>.

Geyer, C. J., Wagenius, S., and Shaw, R. G. (2005). Aster Models for Life History Analysis. Technical Report No. 644. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Geyer, C. J., Lazar, R. C., and Meeden, G. D. (2005). Computing the Joint Range of a Set of Expectations. *Proceedings of the Fourth International Symposium on Imprecise Probabilities and their Applications*. <http://www.sipta.org/isipta05/proceedings/papers/s063.pdf>.

Geyer, C. J. (2006). Correlated Child Nodes in Aster Models Technical Report No. 653. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Geyer, C. J. (2007). Radically Elementary Probability and Statistics. Technical Report No. 657. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/nsa/>.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Etterson, J. R. (2007). Supporting Data Analysis for “Unifying Life History Analysis for Inference of Fitness and Population Growth”. Technical Report No. 658. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Etterson, J. R. (2007). More Supporting Data Analysis for “Unifying Life History Analysis for Inference of Fitness and Population Growth”. Technical Report No. 661. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Etterson, J. R. (2008). Yet More Supporting Data Analysis for “Unifying Life History Analysis for Inference of Fitness and Population Growth”. Technical Report No. 666. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Geyer, C. J and Shaw, R. G. (2008) Supporting Data Analysis for a talk to be given at Evolution 2008. Technical Report No. 669. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Geyer, C. J and Shaw, R. G. (2008) Commentary on Lande-Arnold Analysis. Technical Report No. 670. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Geyer, C. J and Shaw, R. G. (2009) Model Selection in Estimation of Fitness Landscapes. Technical Report No. 671 (revised). School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Geyer, C. J. (2008) Supporting Theory and Data Analysis for “Likelihood Inference in Exponential Families and Directions of Recession” Technical Report No. 672. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/gdor/>.

Geyer, C. J. (2009) More Supporting Data Analysis for “Likelihood Inference in Exponential Families and Directions of Recession” Technical Report No. 673. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/gdor/>.

Geyer, C. J and Shaw, R. G. (2009) Hypothesis Tests and Confidence Intervals Involving Fitness Landscapes fit by Aster Models. Technical Report No. 674. School of Statistics, University of Minnesota. <http://www.stat.umn.edu/geyer/aster/>.

Software Packages:

Geyer, C. J. (2005). R package `aster` (Aster Models). Current version 0.7-7 (2009-03-23). <http://www.stat.umn.edu/geyer/aster/> and <http://cran.r-project.org/src/contrib/Descriptions/aster.html>

Geyer, C. J. (2005). R package `fuzzyRankTests` (Fuzzy Rank Tests and Confidence Intervals). Current version 0.3-2 (09 October 2007). <http://www.stat.umn.edu/geyer/fuzz/> and <http://cran.r-project.org/src/contrib/Descriptions/fuzzyRankTests.html>

Geyer, C. J. (2005). R package `mcmc` (Markov Chain Monte Carlo). Current version 0.6 (8 Apr 2009). <http://www.stat.umn.edu/geyer/mcmc/> and <http://cran.r-project.org/src/contrib/Descriptions/mcmc.html>

Geyer, C. J. (2005). R package `nice` (Get or Set UNIX Niceness). Current version 0.3 (26 Jan 2005). <http://www.stat.umn.edu/geyer/nice/> and <http://cran.r-project.org/src/contrib/Descriptions/nice.html>

Geyer, C. J. and Meeden, G. D. (2005). R package `rcdd` (C Double Description for R). Current version 1.1-3 (2009-07-17). <http://www.stat.umn.edu/geyer/rcdd/> and <http://cran.r-project.org/src/contrib/Descriptions/rcdd.html>

Geyer, C. J. (2005). R package `trust` (Trust Region Optimization). Current version 0.1-2 (2009-01-11). <http://www.stat.umn.edu/geyer/trust/> and <http://cran.r-project.org/src/contrib/Descriptions/trust.html>

Sheng, J., Qiu, P., and Geyer, C. J. (2008). R package `TSHRC` (Two Stage Hazard Rate Comparison). Current version 0.1-2 (2009-02-05). <http://cran.r-project.org/src/contrib/Descriptions/TSHRC.html>

Geyer, C. J. and Meeden, G. D. (2005). R package `ump` (Uniformly Most Powerful Tests). Current version 0.5-2 (09 October 2007). <http://www.stat.umn.edu/geyer/fuzz/> and <http://cran.r-project.org/src/contrib/Descriptions/ump.html>