

February 9, 2024

Charles J. Geyer
Professor
School of Statistics
University of Minnesota
313 Ford Hall
224 Church St. S. E.
Minneapolis, MN 55455
(612) 625-8511
geyer@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.

University of Minnesota, Minnesota Center for Philosophy of Science. Resident Fellow, since 2009.

Thesis Advisor: Elizabeth A. Thompson

Honors:

The paper Shaw, Geyer, Wagenius, Hangelbroek, and Etterson (2008) 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.

Fellow of the Institute of Mathematical Statistics.

Ph. D. Thesis:

Geyer, C. J. (1990). Likelihood and Exponential Families. Ph. D. Thesis, Department of Statistics, University of Washington. <https://hdl.handle.net/11299/56330>.

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 Möller, 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. <https://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. <https://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. (2008). Unifying Life History Analysis for Inference of Fitness and Population Growth. *American Naturalist* **172** E35–E47. (e-paper <https://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. (2009). Adaptive Regularization using the Entire Solution Surface. *Biometrika*, **96**, 513–527.
- Shaw, R. G. and Geyer, C. J. (2010). Inferring Fitness Landscapes. *Evolution*, **64**, 2510–2520.
- Okabayashi, S., Johnson, L. and Geyer, C. J. (2011). Extending Pseudo-Likelihood for Potts Models. *Statistica Sinica*, **21**, 331–347.

- Geyer, C. J. (2011). Introduction to MCMC. In *Handbook of Markov Chain Monte Carlo*. Edited by S. P. Brooks, A. E. Gelman, G. L. Jones, and X. L. Meng. Chapman & Hall/CRC, Boca Raton, pp. 3–48.
- Geyer, C. J. (2011). Importance Sampling, Simulated Tempering, and Umbrella Sampling. In *Handbook of Markov Chain Monte Carlo*. Edited by S. P. Brooks, A. E. Gelman, G. L. Jones, and X. L. Meng. Chapman & Hall/CRC, Boca Raton, pp. 295–311.
- Tewari, S., Geyer, C. J. and Mohan, N. (2011). A Statistical Model for Wind Power Forecast Error and its Application to the Estimation of Penalties in Liberalized Markets. *IEEE Transactions on Power Systems*, **29**, 2031–2039.
- De Andrade, B. B. and Geyer, C. J. (2011). Nonstandard Central Limit Theorems for Markov Chains. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, **19**, 251–274.
- Okabayashi, S. and Geyer, C. J. (2012). Long Range Search for Maximum Likelihood in Exponential Families. *Electronic Journal of Statistics*, **6**, 123–147.
- Johnson, L. T. and Geyer, C. J. (2012). Variable Transformation to Obtain Geometric Ergodicity in the Random-walk Metropolis Algorithm. *Annals of Statistics*, **40**, 3050–3076. Correction: (2013) *Annals of Statistics*, **41**, 2698.
- Geyer, C. J. and Meeden, G. D. (2013). Asymptotics for Constrained Dirichlet Distributions. *Bayesian Analysis*, **8**, 89–110.
- Geyer, C. J. (2013). Asymptotics of Maximum Likelihood without the LLN or CLT or Sample Size Going to Infinity. In *Advances in Modern Statistical Theory and Applications: A Festschrift in honor of Morris L. Eaton*, G. L. Jones and X. Shen eds. IMS Collections, Vol. 10, pp. 1–24. Institute of Mathematical Statistics: Hayward, CA.
- Geyer, C. J., Ridley, C. E., Latta, R. G., Etterson, J. R and Shaw, R. G. (2013). Local Adaptation and Genetic Effects on Fitness: Calculations for Exponential Family Models with Random Effects. *Annals of Applied Statistics*, **7**, 1778–1795.
- Price, B. S., Geyer, C. J., and Rothman, A. J. (2015). Ridge Fusion in Statistical Learning. *Journal of Computational and Graphical Statistics*, **24**, 439–454.
- Shaw, R. G., Wagenius, S., and Geyer, C. J. (2015). The susceptibility of *Echinacea angustifolia* to a specialist aphid: eco-evolutionary perspective on genotypic variation and demographic consequences. *Journal of Ecology*, **103**, 809–818.

Eck, D., Shaw, R. G., Geyer, C. J., and Kingsolver, J. (2015). An integrated analysis of phenotypic selection on insect body size and development time. *Evolution*, **69**, 2525–2532.

Geyer, C. J. and de Andrade, B. B. (2015). Near equivalence on metric spaces and a nonstandard central limit theorem. *Journal of Logic & Analysis*, **7**, 1–20.

Al-Dhalimy, H., and Geyer, C. J. (2016). Surreal Time and Ultratasks. *Review of Symbolic Logic*, **9**, 836–847. doi:[10.1017/S1755020316000289](https://doi.org/10.1017/S1755020316000289).

Price, B. S., Geyer, C. J., and Rothman, A. J. (2019). Automatic response category combination in multinomial logistic regression. *Journal of Computational and Graphical Statistics*, **28**, 758–766. doi:[10.1080/10618600.2019.1585258](https://doi.org/10.1080/10618600.2019.1585258).

Eck, D. J., Geyer, C. J., and Cook, R. D. (2020). Combining envelope methodology and aster models for variance reduction in life history analyses. *Journal of Statistical Planning and Inference*, **205**, 283–292. doi:[10.1016/j.jspi.2019.08.002](https://doi.org/10.1016/j.jspi.2019.08.002).

Eck, D. J., and Geyer, C. J. (2021). Computationally efficient likelihood inference in exponential families when the maximum likelihood estimator does not exist. *Electronic Journal of Statistics*, **15**, 2105–2156. doi:[10.1214/21-EJS1815](https://doi.org/10.1214/21-EJS1815).

Knudson, C., Benson, S., Geyer, C., and Jones, G. (2021). Likelihood-Based Inference for Generalized Linear Mixed Models: Inference with the R Package `glmm`. *Stat*, **10**, e339. doi:[10.1002/sta4.339](https://doi.org/10.1002/sta4.339).

May, G., Shaw, R. G., Geyer, C. J., Eck, D. J. (2022). Do defensive symbionts cause selection for greater pathogen virulence? *American Naturalist*, **199**, 252–265. doi:[10.1086/717679](https://doi.org/10.1086/717679).

Geyer, C. J., Kulbaba, M. W., Sheth, S. N., Pain, R. E., Eckhart, V. M., and Shaw, R. G. (2022). Correction for Kulbaba et al. (2019). *Evolution*, **76**, 3074. doi:[10.1111/evo.14607](https://doi.org/10.1111/evo.14607). Supplementary material (30 pages) doi:[10.5281/zenodo.7013098](https://doi.org/10.5281/zenodo.7013098).

Submitted:

(none).

In Progress:

Geyer, C. J. *Aster Theory*. An incomplete book about the theory of aster models, currently 180 pages. GitHub repository <https://github.com/cjgeyer/AsterTheory>.

In Revision:

Geyer, C. J. and Meeden, G. D. Bayesian asymptotics with locally asymptotically normal likelihood and discontinuous priors. In Revision for *Bayesian Analysis*.

Geyer, C. J. Fuzzy P -values and ties in nonparametric tests. <https://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. <https://hdl.handle.net/11299/58440>.

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. <https://hdl.handle.net/11299/58433>.

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. <https://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. <https://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. <https://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*. <https://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. <https://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. <https://www.stat.umn.edu/geyer/nsa/>.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Eterson, 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. <https://www.stat.umn.edu/geyer/aster/>.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Eterson, 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. <https://www.stat.umn.edu/geyer/aster/>.

Shaw, R. G., Geyer, C. J., Wagenius, S., Hangelbroek, H. H., and Eterson, 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. <https://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. <https://hdl.handle.net/11299/58433>.

Geyer, C. J., and Shaw, R. G. (2008). Commentary on Lande-Arnold Analysis. Technical Report No. 670. School of Statistics, University of Minnesota. <https://hdl.handle.net/11299/56218>.

- 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. <https://hdl.handle.net/56219>.
- 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. <https://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. <https://www.stat.umn.edu/geyer/gdor/>.
- Geyer, C. J., and Shaw, R. G. (2010). Hypothesis Tests and Confidence Intervals Involving Fitness Landscapes fit by Aster Models. Technical Report No. 674 (revised). School of Statistics, University of Minnesota. <https://hdl.handle.net/56328>.
- Geyer, C. J., and Shaw, R. G. (2010). Aster Models and Lande-Arnold Beta. Technical Report No. 675 (revised). School of Statistics, University of Minnesota. <https://hdl.handle.net/56394>.
- Geyer, C. J. (2010). A Philosophical Look at Aster Models. Technical Report No. 676. School of Statistics, University of Minnesota. <https://hdl.handle.net/57163>.
- Geyer, C. J. (2010). Computation for the Introduction to MCMC Chapter of *Handbook of Markov Chain Monte Carlo*. Technical Report No. 679. School of Statistics, University of Minnesota. <https://hdl.handle.net/92549>.
- Johnson, L. and Geyer, C. J. (2011). Geometric Ergodicity of a Random-Walk Metropolis Algorithm for a Transformed Density. Technical Report No. 680. School of Statistics, University of Minnesota. <https://hdl.handle.net/96959>.
- Geyer, C. J., Ridley, C. E., Latta, R. G., Etterson, J. R and Shaw, R. G. (2012). Aster Models with Random Effects via Penalized Likelihood. Technical Report No. 692. School of Statistics, University of Minnesota. <https://hdl.handle.net/135870>.
- Geyer, C. J., and Shaw, R. G. (2013). Aster Models with Random Effects and Additive Genetic Variance for Fitness. Technical Report No. 696. School of Statistics, University of Minnesota. <https://hdl.handle.net/152355>.
- Eck, D., Shaw, R. G., Geyer, C. J., and Kingsolver, J. (2015). Supporting Data Analysis for “An Integrated Analysis of Phenotypic Selection on

Insect Body Size and Development Time”. Technical Report No. 698 (revised). School of Statistics, University of Minnesota. <https://hdl.handle.net/11299/172272>.

R Packages on CRAN:

Geyer, C. J. (2023). R package `aster`: Aster Models, version 1.1-3. <https://www.stat.umn.edu/geyer/aster/> and <https://cran.r-project.org/package=aster>. In CRAN Task View [Survival](#). One other CRAN package depends on it.

Geyer, C. J. (2017). R package `aster2`: Aster Models, version 0.3. <https://www.stat.umn.edu/geyer/aster/> and <https://cran.r-project.org/package=aster2> In CRAN Task View [Survival](#).

Agresti, A. (2022). R package `CatDataAnalysis`: Datasets for *Categorical Data Analysis* by Agresti, version 0.1-5. <https://cran.r-project.org/package=CatDataAnalysis>. Agresti provided the data; Geyer wrote the R scripts that generated the package and is package maintainer. In CRAN Task View [TeachingStatistics](#).

Geyer, C. J. (2021). R package `fuzzyRankTests`: Fuzzy Rank Tests and Confidence Intervals, version 0.4. <https://www.stat.umn.edu/geyer/fuzz/> and <https://cran.r-project.org/package=fuzzyRankTests>. One other CRAN package depends on it.

Geyer, C. J. (2020). R package `glmbb`: All Hierarchical Models for Generalized Linear Model, version 0.5-1. <https://cran.r-project.org/package=glmbb>.

Knudson, C., Geyer, C. J., and Benson, S. (2022). R package `glmm`: Generalized Linear Mixed Models via Monte Carlo Likelihood Approximation, version 1.4.4. <https://cran.r-project.org/package=glmm>.

Geyer, C. J. and Johnson, L. T. (2023). R package `mcmc`: Markov Chain Monte Carlo, version 0.9-8. <https://www.stat.umn.edu/geyer/mcmc/> and <https://cran.r-project.org/package=mcmc>. In CRAN Task View [Bayesian](#). Three other CRAN packages depend on it.

Geyer, C. J. (2023). R package `nice`: Get or Set UNIX Niceness, version 0.4-2. <https://www.stat.umn.edu/geyer/nice/> and <https://cran.r-project.org/package=nice>.

Meeden, G., Lazar, R., and Geyer, C. J. (2021). R package `polyapost`: Simulating from the Polya Posterior, version 1.7. <https://cran.r-project.org/package=polyapost>.

Geyer, C. J. (2017). R package `pooh`: Partial Orders and Relations, version 0.3-2. <https://www.stat.umn.edu/geyer/pooh/> and <https://cran.r-project.org/package=pooh>. One other CRAN package depends on it.

Geyer, C. J. and Johnson, L. (2022). R package `potts`: Potts Models, version 0.5-11. <https://www.stat.umn.edu/geyer/mcmc/> and <https://cran.r-project.org/package=potts>.

Geyer, C. J., Meeden, G. D., and Fukuda, K. (2023). R package `rcdd`: C Double Description for R, version 1.6. <https://www.stat.umn.edu/geyer/rcdd/> and <https://cran.r-project.org/package=rcdd>. In CRAN Task View [Optimization](#). Sixteen other CRAN packages depend on it.

Geyer, C. J. and Thompson, E. A. (2023). R package `sped`: Multi-Gene Descent Probabilities, version 0.3. <https://cran.r-project.org/package=sped>.

Geyer, C. J. (2020). R package `trust`: Trust Region Optimization, version 0.1-8. <https://www.stat.umn.edu/geyer/trust/> and <https://cran.r-project.org/package=trust>. Twenty-two other CRAN packages depend on it.

Sheng, J., Qiu, P., and Geyer, C. J. (2019). R package `TSHRC`: Two Stage Hazard Rate Comparison, version 0.1-6. <https://cran.r-project.org/package=TSHRC>. In CRAN Task View [Survival](#). One other CRAN package depends on it.

Geyer, C. J. and Meeden, G. D. (2017). R package `ump`: Uniformly Most Powerful Tests, version 0.5-8. <https://www.stat.umn.edu/geyer/fuzz/> and <https://cran.r-project.org/package=ump>.

R Packages on Github:

Geyer, C. J. (2024). R package `bar`: Demo Regression Models, version 0.5. <https://github.com/cjgeyer/bar>.

Geyer, C. J. (2024). R package `baz`: Demo Calling BLAS or LAPACK from C Called from R, version 0.6. <https://github.com/cjgeyer/mat>.

Geyer, C. J. and Sung, Y. J. (2024). R package `bernor`: Bernoulli Regression with Normal Random Effects, version 0.3-13. <https://github.com/cjgeyer/bernor>.

Geyer, C. J. (2024). Github repo `foo`, which contains two R packages `foo` (version 0.9) and `fooRegister` (version 0.9) illustrating calling C and Fortran functions from R and using the R random number generator system in C or Fortran called from R. Both do exactly the same thing but the latter also illustrates how to register native routines as per Sections 5.4 and 6.15 of [Writing R Extensions](#). <https://github.com/cjgeyer/foo>.

Geyer, C. J. (2024). Github repo `linkingTo`, which contains two R packages `foompt` (version 0.6) and `goompt` (version 0.6) illustrating calling C functions in one package from C functions called from R in the other package. <https://github.com/cjgeyer/linkingTo>.

Geyer, C. J. (2024). R package `qux` (Demo Calling R from C or Fortran Called from R). Current version 0.5 (2023-01-20). <https://github.com/cjgeyer/qux>.