

# Publication list

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- [16] **F. Gerber** and D. W. Nychka. Fast covariance parameter estimation of spatial Gaussian process models using neural networks. *Stat*, **2021**. doi:[10.1002/sta4.382](https://doi.org/10.1002/sta4.382)
- [15] **F. Gerber** and D. W. Nychka. Parallel cross-validation: A scalable fitting method for Gaussian process models. *Computational Statistics & Data Analysis*, 155:107–113, **2021**. doi:[10.1016/j.csda.2020.107113](https://doi.org/10.1016/j.csda.2020.107113)
- [14] R. Flury, **F. Gerber**, B. Schmid, and R. Furrer. Identification of dominant features in spatial data. *Spatial Statistics*, **2020**. ISSN 2211-6753. doi:[10.1016/j.spasta.2020.100483](https://doi.org/10.1016/j.spasta.2020.100483)
- [13] **F. Gerber** and R. Furrer. optimParallel: An R package providing a parallel version of the L-BFGS-B optimization method. *The R Journal*, 11(1):352–358, **2019**. doi:[10.32614/RJ-2019-030](https://doi.org/10.32614/RJ-2019-030)
- [12] **F. Gerber**, K. Mösinger, and R. Furrer. dotCall64: An R package providing an efficient interface to compiled C, C++, and Fortran code supporting long vector. *SoftwareX*, 7:217–221, **2018**. doi:[10.1016/j.softx.2018.06.002](https://doi.org/10.1016/j.softx.2018.06.002)
- [11] M. J. Heaton, A. Datta, A. O. Finley, R. Furrer, J. Guinness, R. Guhaniyogi, **F. Gerber**, R. B. Gramacy, D. Hammerling, M. Katzfuss, F. Lindgren, D. W. Nychka, F. Sun, and A. Zammit-Mangion. A case study competition among methods for analyzing large spatial data. *Journal of Agricultural, Biological and Environmental Statistics*, **2018**. doi:[10.1007/s13253-018-00348-w](https://doi.org/10.1007/s13253-018-00348-w)
- [10] B. H. Warren, O. Hagen, **F. Gerber**, C. Thébaud, E. Paradis, and E. Conti. Evaluating alternative explanations for an association of extinction risk and evolutionary uniqueness in multiple insular lineages. *Evolution*, 72(10): 2005–2024, **2018**. doi:[10.1111/evo.13582](https://doi.org/10.1111/evo.13582)
- [9] **F. Gerber**, R. de Jong, M. E. Schaepman, G. Schaepman-Strub, and R. Furrer. Predicting missing values in spatio-temporal remote sensing data. *IEEE Transactions on Geoscience and Remote Sensing*, 56(5):2841–2853, **2018**. doi:[10.1109/TGRS.2017.2785240](https://doi.org/10.1109/TGRS.2017.2785240)
- [8] **F. Gerber**, K. Mösinger, and R. Furrer. Extending R packages to support 64-bit compiled code: An illustration with spam64 and GIMMS NDVI<sub>3g</sub> data. *Computers & Geosciences*, **2016**. doi:[10.1016/j.cageo.2016.11.015](https://doi.org/10.1016/j.cageo.2016.11.015)
- [7] **F. Gerber** and T. Gsponer. gsbDesign: An R package for evaluating the operating characteristics of a group sequential Bayesian design. *Journal of Statistical Software*, 69(1):1–23, **2016**. doi:[10.18637/jss.v069.i11](https://doi.org/10.18637/jss.v069.i11)
- [6] S. Bratulic, **F. Gerber**, and A. Wagner. Mistranslation drives the evolution of robustness in tem-1  $\beta$ -lactamase. *Proceedings of the National Academy of Sciences*, 112(41):12758–12763, **2015**. doi:[10.1073/pnas.1510071112](https://doi.org/10.1073/pnas.1510071112)
- [5] **F. Gerber** and R. Furrer. Pitfalls in the implementation of Bayesian hierarchical modeling of areal count data: An illustration using BYM and Leroux models. *Journal of Statistical Software*, 63(1):1–32, **2015**. doi:[10.18637/jss.v063.c01](https://doi.org/10.18637/jss.v063.c01)
- [4] T. Bashir, C. Sailer, **F. Gerber**, N. Loganathan, H. Bhoopalan, C. Eichenberger, U. Grossniklaus, and B. Ramamurthy. Hybridization alters spontaneous mutation rates in a parent-of-origin-dependent fashion in Arabidopsis. *Plant Physiology*, 165(1):424–437, **2014**. doi:[10.1104/pp.114.238451](https://doi.org/10.1104/pp.114.238451)
- [3] T. Gsponer, **F. Gerber**, B. Bornkamp, D. Ohlssen, M. Vandemeulebroecke, and H. Schmidli. A practical guide to Bayesian group sequential designs. *Pharmaceutical Statistics*, 13(1):71–80, **2014**. doi:[10.1002/pst.1593](https://doi.org/10.1002/pst.1593)
- [2] **F. Gerber**, F. Marty, G. B. Eijkel, K. Basler, E. Brunner, R. Furrer, and R. M. A. Heeren. Multiorder correction algorithms to remove image distortions from mass spectrometry imaging data sets. *Analytical Chemistry*, 85(21): 10249–10254, **2013**. doi:[10.1021/ac402018e](https://doi.org/10.1021/ac402018e)
- [1] G. Wandeler, **F. Gerber**, and others. Tenofovir or Zidovudine in second-line antiretroviral therapy after Stavudine failure in Southern Africa. *Antiviral Therapy*, 19(5):521–525, **2013**. doi:[10.3851/imp2710](https://doi.org/10.3851/imp2710)

## Contributions to open-source software

1. The R package [optimParallel](#) provides parallel versions of a popular gradient-based optimization method.  
Author: **F. Gerber**; CRAN Release: 2018; downloads\*: 37'000
2. The Python package [optimparallel](#) provides parallel versions of a popular gradient based optimization method.  
Author: **F. Gerber**; CRAN Release: 2020; downloads\*: 2'000
3. The R package [gapfill](#) predicts missing values of large spatio-temporal satellite datasets.  
Author: **F. Gerber**; CRAN Release: 2016; downloads\*: 22'000
4. The R package [fields](#) is a popular package for spatial statistics.  
Authors: D. Nychka, R. Furrer, J. Paige, Stephan Sain, **F. Gerber**, M. Iverson, University Corporation for Atmospheric Research; CRAN Release: 2001; downloads\*: 1'900'000
5. The R package [spam](#) provides a storage format and algorithms for sparse matrices.  
Authors: R. Furrer, **F. Gerber**, R. Flury, D. Gerber, K. Moesinger, Y. Saad, E. G. Ng, B. W. Peyton, J. Liu, A. D. George, L. B. Rich, M. Kristi, S. C. Danny, Y. Chao; CRAN Release: 2007; downloads\*: 1'800'000
6. The R package [spam64](#) is a 64-bit extension of the R package spam.  
Authors: R. Furrer, **F. Gerber**, R. Flury, D. Gerber, K. Moesinger, Y. Saad, E. G. Ng, B. W. Peyton, J. Liu, A. D. George, L. B. Rich, M. Kristi, S. C. Danny, Y. Chao; CRAN Release: 2017; downloads\*: 85'000
7. The R package [dotCall64](#) provides a foreign function interface with long vector support.  
Authors: K. Mösinger, **F. Gerber**, R. Furrer; CRAN Release: 2016; downloads\*: 1'100'000
8. The R package [gsbDesign](#) helps to evaluate group sequential Bayes designs of clinical trials.  
Authors: **F. Gerber**, T. Gsponer; CRAN Release: 2012; downloads\*: 31'000
9. The R package [vcd](#) provides tools for categorical data.  
Authors: D. Meyer, A. Zeileis, K. Hornik, **F. Gerber**, M. Friendly; CRAN Release: 2003; downloads\*: 2'700'000

\*Number of downloads provided by RStudio and PyPI.