Douglas W. Nychka

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Education

Duke University, Mathematics and Physics, *summa cum laude* B.A. 1978
University of Wisconsin - Madison, Statistics Ph. D. 1983

Appointments

8/18 - present: Professor, Department of Applied Mathematics and Statistics,
Colorado School of Mines, Golden,CO

8/99 - present: Senior Scientist Emeritus (8/18- present),
Director, Institute for Mathematics Applied to Geosciences (11/2005-8/2016),
Project Leader, Geophysical Statistics Project (8/97-6/2006), Senior Scientist (8/99-8/18)
National Center for Atmospheric Research, Boulder, CO

7/83-6/99: Assistant (7/83-6/89), Associate (7/89-6/94) and Full Professor (7/94-6/99),
Department of Statistics North Carolina State University, Raleigh, NC

1/94-7/97: Senior Fellow, National Institute of Statistical Sciences, Research Triangle Park, NC

Awards and fellowships

Fellow, American Statistical Association (2003)
Jerry Sacks Award for Multidisciplinary Research (2004)
Distinguished Achievement Award, American Statistical Association, Section on the Environment (2013)
Achievement Award, International Meeting on Statistical Climatology (2013)
Fellow, Institute of Mathematical Statistics (2015)

Research and Publications

Douglas Nychka's research areas include statistical methods and mathematical theory for curve and surface fitting and a broad interest in data analysis for the geosciences.

- Gerber, F. and Nychka, D. (2021). Fast covariance parameter estimation of spatial gaussian process models using neural networks. *Stat*, 10(1):e382
- Nychka, D., Ma, P., Bates, D., et al. (2020). A conversation with Grace Wahba. *Statistical Science*, 35(2):308–320
- Nychka, D., Hammerling, D., Krock, M., and Wiens, A. (2018). Modeling and emulation of nonstationary gaussian fields. *Spatial statistics*, 28:21–38
- Nychka, D., Bandyopadhyay, S., Hammerling, D., Lindgren, F., and Sain, S. (2015). A multi-resolution Gaussian process model for the analysis of large spatial datasets. *Journal of Computational and Graphical Statistics*, 24(2):579–599
- Cooley, D., Nychka, D., and Naveau, P. (2007). Bayesian spatial modeling of extreme precipitation return levels. *Journal of the American Statistical Association*, 102(479):824–840

Synergistic Activities

R contributed packages: See `cran.r-project.org`

`fields`: Tools for spatial data, Nychka, D., R Furrer, S. Sain, and John Page (2019)
(> 230K downloads since 7/2016)

`LatticeKrig`: Multi-resolution Kriging, Nychka, D., Hammerling, D. Sain, S. and Iverson, M. (2019)
(> 3.5K downloads since 7/2016)

Selected Community Service

Surface Temperature Reconstructions for the Last 2,000 Years US, Nat. Academy of Sciences (2006)
Verification & Validation and Uncertainty Quantification, Nat. Res. Council (2010–2012).
Board of Governors, Institute for Mathematical Applications, University of Minnesota (2011– 2015)
Chair, Scientific Advisory Board, Pacific Institute of Mathematics (2015 –)