

# Tatyana Krivobokova

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## Current position

*Professor for Statistics with Applications in Economics*

Department of Statistics and Operations Research, University of Vienna

## Research interests

Non-parametric and Bayesian modelling and inference;

Dimension reductions techniques;

Modelling of dependent and complex data with applications in biophysics, economics

## Education

- 2007 *PhD in Statistics*, Bielefeld University, Germany
- 2002 *MSc in Financial Mathematics*, University of Kaiserslautern, Germany
- 1996 *Diploma in Applied Mathematics*, Kazakh State National University, Almaty

## Appointments held

- 2010-2020 *W2 Professor*, Institute for Mathematical Statistics, University of Göttingen, Germany
- 2008-2010 *Junior Professor*, CRC "Poverty, equity and growth", University of Göttingen, Germany
- 2007-2008 *Postdoctoral researcher*, ORSTAT, KU Leuven, Belgium
- 2003-2007 *Research assistant*, Chair of Statistics, Bielefeld University, Germany
- 2000-2003 *Student research assistant*, Fraunhofer IESE, Kaiserslautern, Germany

## Publications

### Preprints

- 2021 Serra, P., Krivobokova, T., Rosales, F. (2021) Joint estimation of mean and autocovariances for Gaussian processes.
- 2021 Kramlinger, P., Krivobokova, T., Sperlich, S. (2021) Marginal and conditional multiple inference for linear mixed models predictors.
- 2021 Kramlinger, P., Schneider, U., Krivobokova, T. (2021) Uniformly valid inference based on the Lasso in linear mixed models.

### Journal articles

- 2021 Schneider, L.F., Krajina A., Krivobokova, T. (2021) Threshold selection in univariate extreme value analysis. *Extremes*. <https://doi.org/10.1007/s10687-021-00405-7>
- 2019 Dunker, F., Klasen, S., Krivobokova, T. (2019) Asymptotic distribution and simultaneous confidence bands for ratios of quantile functions. *Electronic Journal of Statistics*, 13(2):4391-4415 .
- 2018 Yoon, J., Krivobokova, T. (2018) Treatments of non-metric variables in partial least squares and principal component analysis. *Journal of Applied Statistics*, 45(6): 971-987.
- 2017 Singer, M., Krivobokova, T., Munk, A. (2017) Kernel partial least squares for stationary data. *Journal of Machine Learning Research*, 18(123):1-41.
- 2017 Serra, P., Krivobokova, T. (2017) Adaptive empirical Bayesian smoothing splines. *Bayesian Analysis*, 12(1): 219-238.
- 2016 Singer, M., Krivobokova, T., Munk, A. and de Groot, B.L. (2016) Partial least squares for dependent data. *Biometrika*, 103 (2): 351-362.
- 2016 Schwarz, K., Krivobokova, T. (2016) A unified framework for spline estimators. *Biometrika*, 103(1): 103-120.
- 2016 Klasen, S., Krivobokova, T., Greb. F., Lahoti, R., Pasaribu, S., Wiesenfarth, M. (2016) International poverty measurement: which way now? *Journal of Economic Inequality*, 14(2): 199-225.
- 2015 Peter, P., Weickert, J., Munk, A., Krivobokova, T., Li, H. (2015) Justifying tensor-driven diffusion from structure-adaptive statistics of natural images. *Energy Minimization Methods in Computer Vision and Pattern Recognition*, 8932, 263-277.
- 2014 Greb, F., Krivobokova, T., Munk, A., von Cramon-Taubadel, S. (2014) Regularized Bayesian estimation of generalized threshold regression models. *Bayesian Analysis*, 9(1): 171-196.
- 2013 Greb, F., von Cramon-Taubadel, S., Krivobokova, T., and Munk, A. (2013) The estimation of threshold models in price transmission analysis. *American Journal of Agricultural Economics*, 95(4): 900-916.
- 2013 Krivobokova, T. (2013) Smoothing parameter selection in two frameworks for penalized splines. *Journal of the Royal Statistical Society, Series B*, 75(4): 725-741.
- 2012 Krivobokova, T., Briones, R., Hub, J., Munk, A., de Groot, B. (2012) Partial least squares functional mode analysis: application to the membrane proteins AQP1, Aqy1 and CLC-ec1. *Biophysical Journal*, 103(4): 786-796.
- 2012 Wiesenfarth, M., Krivobokova, T., Klasen, S., Sperlich, S. (2012) Direct simultaneous

- inference in additive models and its application to model undernutrition. *Journal of the American Statistical Association*, 107(500): 1286-1296.
- 2011 Kauermann, G., Krivobokova, T., Semmler, W. (2011) Filtering time series with penalized splines. *Studies in Nonlinear Dynamics and Econometrics*, 15(2).
- 2010 Krivobokova, T., Kneib, T., Claeskens, G. (2010) Simultaneous confidence bands for penalized spline estimators. *Journal of the American Statistical Association*, 105(490): 852-863
- 2009 Claeskens, G., Krivobokova, T., Opsomer, J.D. (2009) Asymptotic properties of penalized spline estimators. *Biometrika*, 96(3): 529-544.
- 2009 Kauermann, G., Krivobokova, T., Fahrmeir, L. (2009) Some asymptotic results on generalized penalized spline smoothing. *Journal of the Royal Statistical Society, Series B*, 71(2): 487-503.
- 2008 Krivobokova, T., Crainiceanu, C.M., Kauermann, G. (2008) Fast adaptive penalized splines. *Journal of Computational and Graphical Statistics*, 17(1): 1-20.
- 2007 Krivobokova, T., Kauermann, G. (2007) A note on penalized spline smo with correlated errors. *Journal of the American Statistical Association*, 102(480): 1328-1337.
- 2006 Krivobokova, T., Kauermann, G. and Archontakis, T. (2006) Estimating the term structure of interest rates with penalised splines. *Statistical Papers*, 47(3): 443-459.
- 2004 Pfahl D., Laitenberger O., Ruhe G., Dorsch J. and Krivobokova T. (2004) Evaluating the learning effectiveness of using simulations in software project management education: results from a twice replicated experiment. *Information and Software Technology*, 46(2): 127-147.

### Recent invited talks

- 2019 Adaptive estimation and testing in regression with dependent errors. Invited talk, *Annual conference of the Royal Statistical Society of Belgium*
- 2018 Adaptive estimation and testing in regression with dependent errors. Gumbel Lecture, *Statistische Woche 2018*
- 2018 Partial least squares for dependent data. Seminar, *University of Cambridge*
- 2017 Partial least squares for dependent data. Seminar, *Tsinghua University, Beijing*
- 2017 Kernel Partial least squares for stationary data. Van Dantzig Seminar, *University of Delft*
- 2016 Partial least squares for dependent data. Seminar, *KU Leuven*
- 2016 Partial least squares for dependent data. Seminar, *Vienna University of Technology*
- 2016 Partial least squares for dependent data. Seminar, *École Polytechnique Fédérale de Lausanne*

### Organised workshops and sessions

- 2017 Invited session at ERCIM 2017 “Nonparametric modelling of dependent data”
- 2016 Invited session at ERCIM 2016 “Advances in model specification tests in regression”
- 2013 Workshop “[Dependent Functional Data](#)”, University of Göttingen
- 2010 Workshop “[Econometric Aspects of Price Transmission Analysis](#)”, University of Göttingen.

### Principal investigator in third-party funding projects

- 2015-2019 Research Project "Reducing Poverty Risk in Developing Countries", Ministry of Science and Culture of Lower Saxony  
2015-2020 RTG 2088 "Discovering Structure in Complex Data", DFG  
2012-2020 RTG 1723 "Globalisation and development", DFG  
2011-2019 SFB 755 "Nanoscale Photonic Imaging", DFG  
2011-2015 Swiss-German FOR 916 "Statistical regularization and qualitative constraints", DFG  
2010-2019 RTG 1644 "Scaling Problems in Statistics", DFG  
2008-2011 RTG 1023 "Identification in Mathematical Models – Synergy of Stochastic and Numerical Methods", DFG

### Invited research stays

- 2018 Isaac Newton Institute, University of Cambridge, UK  
2017 Tsinghua University, Beijing, China  
2015 University of Poitiers, France

### Associate editor

- 2019- Journal of the American Statistical Association  
2014-2021 Scandinavian Journal of Statistics  
2017-2018 Computational Statistics and Data analysis  
2012-2016 Sankhya B, the Indian Journal of Statistics

### Service

- 2018-2020 Managing director, Institute for Mathematical Stochastics, University of Göttingen  
2016-2020 Elected member of the European Regional Committee (ERC) of the Bernoulli Society  
2012-2020 Member of the steering committee of the Center for Statistics, University of Göttingen  
2015-2017 Member of the steering committee of the DFG-AIMS initiative

### PhD students

- 2020- Fabio Tonti  
2019- Karolina Klockmann  
2018- Richard Haarbuerger  
2016-2020 Peter Kramlinger, *Essays on inference in linear mixed models*

- 2013-2016 Marco Singer, *Partial least squares for serially dependent data*
- 2011-2016 Francisco Rosales, *Empirical Bayesian smoothing splines for signals with correlated errors: methods and applications*
- 2012-2015 Jisu Yoon, *Partial least squares and principal component analysis with non-metric variables for composite indices*
- 2008-2013 Katsiaryna Schwarz, *A unified framework for spline estimators*
- 2008-2012 Manuel Wiesenfarth, *Estimation and inference in special nonparametric models with applications to topics in development Economics*
- 2009-2012 Friederike Greb, *Improved estimation in threshold regression with application to price transmission modeling*

### Postdoctoral students

- 2021- Dr. Gianluca Finocchio
- 2020- Dr. Peter Kramlinger
- 2016-2019 Dr. Marco Singer
- 2015-2017 Dr. Fabian Dunker
- 2013-2015 Dr. Paulo Serra

### Teaching

- 2020-2021 Generalised linear models (in German), University of Vienna
- 2020-2021 Linear multivariate statistics (in German), University of Vienna
- 2020 Applied statistics (in German), University of Vienna
- 2020 Complex statistical methods (in English), University of Vienna
- 2020 Selected topics in Statistics (in English), University of Vienna
- 2016-2018 Statistical modelling and inference I - IV (in English), University of Göttingen
- 2017 Statistics for Geoscientists (in German), University of Göttingen
- 2015 Foundations of stochastics (in German), University of Göttingen
- 2015, 2016 Applied statistics (in German), University of Göttingen
- 2008-2014 Smoothing methods in statistics (in English), University of Göttingen
- 2012-2014 Discrete Stochastics (in German), University of Göttingen
- 2010-2020 Practical course in R (in English), University of Göttingen
- 2009-2011 Smoothing with splines (in English), University of Göttingen
- 2007, 2008 Statistics (in English), Bielefeld University
- 2004-2006 Estimation and hypothesis testing (in German), Bielefeld University
- 2004-2007 Generalized linear models (in German), Bielefeld University

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