

# 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) Adaptive non-parametric estimation of mean and autocovariance in regression with dependent errors.
- 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*, to appear
- 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., de Groot, B.L. and Munk, A. (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 splines 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. *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- 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 Haarbürger  
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

- 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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