



## Dr Tobias Kley

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## Summary

Tobias' research focuses on statistical procedures that provide alternatives to and supplement traditional methods by providing additional information. The methods he proposes can be applied in a wide variety of situations and under conditions where other methods fail. His broad interests include, for example, quantile regression, copulas and rank-based procedures applied to the analysis of stationary and non-stationary time series. Besides his methodological work, Tobias passionately implements the methods from his work in a rigorously systematic fashion to provide publicly available and reusable statistical software.

## Memberships

### Organisations

[School of Mathematics](#)

### Statistical Science

- [Statistical Science](#)

### Research themes

- [Time Series](#)

## Recent publications

- Kley, T, Preuß, P & Fryzlewicz, P, 2019, '[Predictive, finite-sample model choice for time series under stationarity and non-stationarity](#)'. *Electronic Journal of Statistics*, vol 13., pp. 3710-3774
- Birr, S, Kley, T & Volgushev, S, 2019, '[Model assessment for time series dynamics using copula spectral densities: A graphical tool](#)'. *Journal of Multivariate Analysis*, vol 172., pp. 122-146
- Baruník, J & Kley, T, 2019, '[Quantile coherency: a general measure for dependence between cyclical economic variables](#)'. *Econometrics Journal*, vol 22., pp. 131-152
- Birr, S, Dette, H, Hallin, M, Kley, T & Volgushev, S, 2018, '[On Wigner-Ville spectra and the unicity of time-varying quantile-based spectral densities](#)'. *Journal of Time Series Analysis*, vol 39., pp. 242-250
- Birr, S, Volgushev, S, Kley, T, Dette, H & Hallin, M, 2017, '[Quantile spectral analysis for locally stationary time series](#)'. *Journal of the Royal Statistical Society: Series B*, vol 79., pp. 1619-1643
- Kley, T, 2016, '[Quantile-based spectral analysis in an object-oriented framework and a reference implementation in R: the quantspec Package](#)'. *Journal of Statistical Software*, vol 70., pp. 1-27
- Kley, T, Volgushev, S, Dette, H & Hallin, M, 2016, '[Quantile spectral processes: asymptotic analysis and inference](#)'. *Bernoulli*, vol 22., pp. 1770-1807
- Dette, H, Hallin, M, Kley, T & Volgushev, S, 2015, '[Of copulas, quantiles, ranks and spectra: an L1-approach to spectral analysis](#)'. *Bernoulli*, vol 21., pp. 781-831

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