



Universität Ulm | 89069 Ulm | Germany

**Fakultät für Mathematik und
Wirtschaftswissenschaften**
Institut für Stochastik

Prof. Dr. Evgeny Spodarev

Helmholtzstr. 18
89081 Ulm, Germany

Tel: +49 731 50-23530
Fax: +49 731 50-23649
evgeny.spodarev@uni-ulm.de
<http://www.uni-ulm.de/stochastik>

22. September 2017

Einladung zum Vortrag

von

Herrn Marco Oesting
Universität Siegen

Extremal Behaviour of Aggregated Data with an Application to Downscaling

The distribution of spatially aggregated data from a stochastic process X may exhibit a different tail behavior than its marginal distributions. For a large class of aggregating functionals ℓ we introduce the ℓ -extremal coefficient that quantifies this difference as a function of the extremal spatial dependence in X . We also obtain the joint extremal dependence for multiple aggregation functionals applied to the same process. Explicit formulas for the ℓ -extremal coefficients and multivariate dependence structures are derived in important special cases. The results provide a theoretical link between the extremal distribution of the aggregated data and the corresponding underlying process, which we exploit to develop a method for statistical downscaling. We apply our framework to downscale daily temperature maxima in the south of France from a gridded data set and use our model to generate high resolution maps of the warmest day during the 2003 heatwave.

This is joint work with Sebastian Engelke and Raphael de Fondeville.

Termin: Montag, 22. Januar 2018, 14:00 Uhr

Ort: Universität Ulm, Helmholtzstr. 18, Raum 1.20

Interessenten sind herzlich eingeladen.

Der Vortrag findet im Rahmen des Forschungsseminars des Institutes für Stochastik statt.

gez. E. Spodarev