

Berlin Mathematical School

BMS



BMS Days 2020

Monday 17 February 2020

Loft, Urania, An der Urania 17, 10787 Berlin



11:00 Nicolas Perkowski (FU Berlin)

15:30 Andrea Walther (HU Berlin)

Nicolas Perkowski: The hidden regularity of random singularities

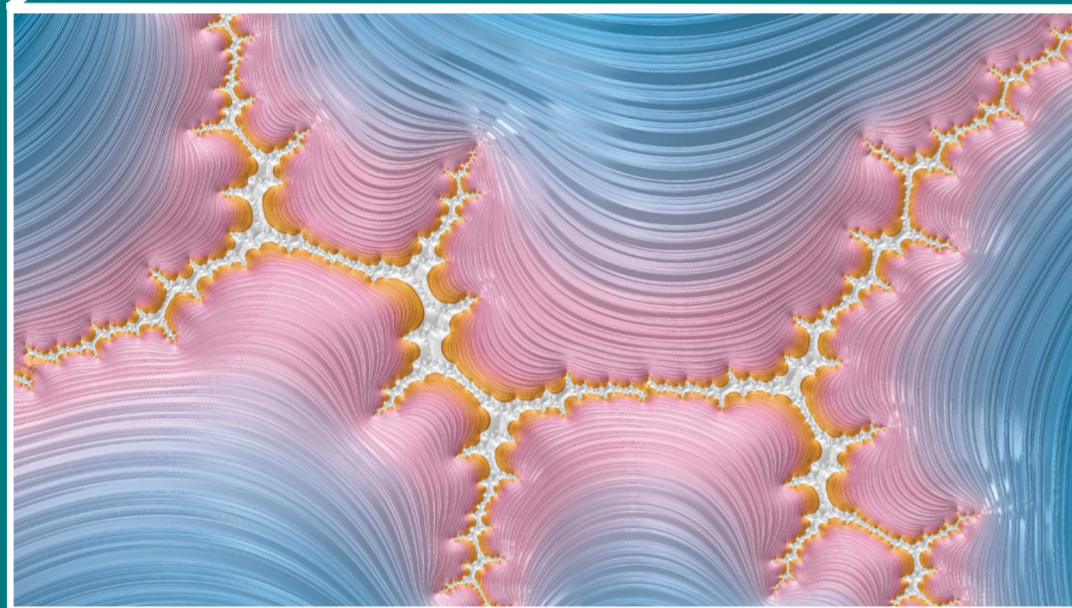
Universality is one of the most intriguing aspects of probability theory and it explains why certain probability distributions arise more naturally than others. But universal models for space-time phenomena often have a fractal-like structure and are quite singular and nowhere differentiable. In my talk I will explain how we can still interpret them as “smooth” functions and do calculus with them.

Nicolas Perkowski is a professor of stochastics at FU Berlin. His scientific research focuses on stochastic analysis and random dynamics.

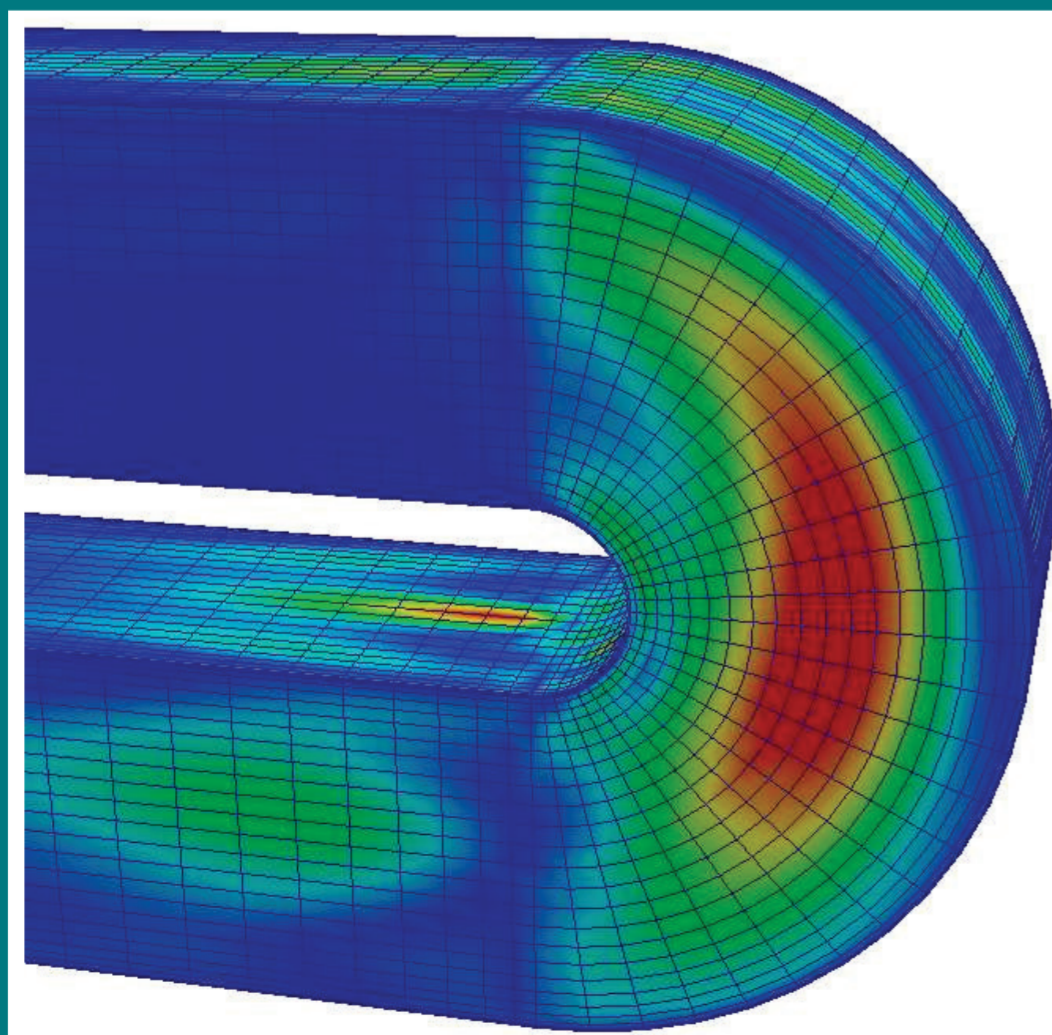
Andrea Walther: Adjoint-based Optimization in Computational Fluid Dynamics

The design chain in Computational Fluid Dynamics covers the parameterization of a object like an air foil, the use of Computer Aided Design tools to actually construct the air foil, and a flow solver to compute the flow around the air foil. In this talk we discuss a gradient-based optimization for this design chain. Results for the optimization of the TU Berlin stator are shown.

Andrea Walther is a professor of mathematical optimization at HU Berlin. Her research interests include nonlinear optimization and algorithmic differentiation.



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