

**PHYSICAL COLLOQUIUM**

**INVITATION**

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Monday, 10.01.2022, 4.15 p.m.,  
video conference: <https://meeting.uol.de/b/anj-2vc-j6s-fwe>

speaks

**Professor Christian Beck,  
Head of Dynamical Systems and Statistical Physics Group,  
School of Mathematical Sciences,  
Queen Mary, University of London, London, UK**

about

**"Statistical Physics Methods for Sustainable Energy Systems"**

In this talk I will provide a brief introduction to methods of nonequilibrium statistical physics as applied to sustainable energy systems and other systems of environmental interest. In particular I will talk about so-called superstatistical methods, which are a useful concept borrowed from nonequilibrium statistical mechanics to describe heterogeneous complex systems with a clear separation of time scales. Originally developed for hydrodynamic turbulence, these methods now find new applications to understand the dynamics of tiny frequency fluctuations in power grids, where demand fluctuations, renewable energy production, and trading effects provide a very complex statistical structure. Other recent applications of superstatistics include modelling fluctuations in air pollution concentrations, as well as monitoring water quality in rivers.

All interested persons are cordially invited.

Sgd. Prof. Dr. Joachim Peinke