



UNIVERSITÄT  
LEIPZIG

Fakultät für Physik und  
Geowissenschaften

Prof. Dr. C. Schnohr  
Prof. Dr. J. Vollmer

# Physics Colloquium

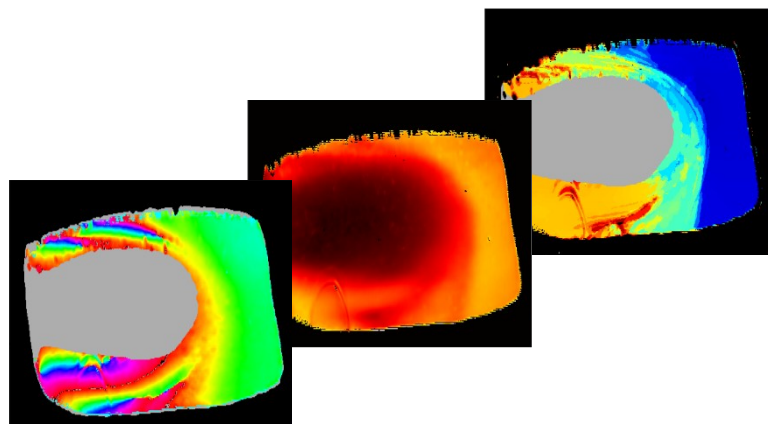
Tuesday, 13 October 2020 at 17.15

**Prof. Dr. Katharina Krischer**

Technische Universität München

## Novel manifestations of collective oscillations

Collective oscillations are a paradigm for emergent behaviour. They occur in virtually all disciplines, and although being investigated since Huygens' famous discovery of synchronizing clocks in the 17<sup>th</sup> century, we continue to witness novel and important forms of oscillating patterns. This is true not only for fundamental studies but also for technologically relevant systems, ranging from catalysis to batteries. In my talk, I will give an overview of these recent developments, with emphasis on two phenomena that our group has investigated: Oscillations of globally coupled bistable, non-resonant components, as observed during electro-catalytic reactions, and the occurrence of multi-frequency clusters in oscillating media with nonlinear coupling. I will demonstrate that the latter is capable of generating an adaptive coupling, as known from neural dynamics in the brain, and present first experimental observations of an adaptive coupling in a non-living system.



**Venue: Hörsaal für Theoretische Physik, Linnéstraße 5 and Big Blue Button**