

# Transfer Operator Families and Coherent Sets

Andreas Denner (Technical University of Munich) Clarence W. Rowley (Princeton University), Oliver Junge  
(Technical University of Munich)

The computation of sets in phase space of a time variant dynamical system which are separated by transport barriers, so called coherent sets, is of interest for systems at the onset of turbulence, e.g. atmospheric flows or plasma physics. In this talk we present a way to compute finite-time coherent structures via considering the system at all time instants. This is done by analysing a corresponding transfer operator family as a whole. We furthermore discuss different discretizations, some of them leading to recently developed, purely data-driven algorithms and so providing a set oriented justification for those.