

PHYSIKALISCHES KOLLOQUIUM

Mittwoch, 24.04.2013, um 17:15 Uhr

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013



Vorstellung Habilitation

Dr. Hongliu Yang

TU Chemnitz

Stability analysis of nonlinear systems, effective degrees of freedom, and the linear response theory

Nonlinear phenomenon are of interest to a lot of researchers because most systems around us are inherently nonlinear in nature. An interesting characteristic of nonlinear systems is that a small change in the current state can result in big differences in future states, i.e. the sensitive dependence on initial conditions. The atmosphere is an example of such chaotic systems, which makes the long-term prediction of weather impossible. Stability analysis of chaotic dynamics, the characterization of the sensitive dependence on initial conditions, is a central topic of modern nonlinear dynamics. In in talk, it will be reviewed first how the stability analysis of chaotic dynamics is done. Then, two examples will be given to show how the stability analysis can be used to extract the effective degrees of freedom of partial differential equations, and to estimate the linear response of nonlinear systems, respectively.

Alle Zuhörer sind ab 17:00 Uhr zum Kaffee vor dem Hörsaal eingeladen.