Fakultät Mathematik   Dresden, 2. Februar 2022
Institut für Analysis

Im

Oberseminar Analysis

hält

Prof. Dr. **Fabian Wirth**

Universität Passau, Fakultät für Informatik und Mathematik

einen Vortrag zum Thema

Stability theory, Lyapunov functions and Koopman operators

Abstract:
This talk is based on joint work with Jochen Glück and Andrii Mironchenko.
Koopman theory provides an interesting link between operator theory and dynamical systems. The approach has become increasingly popular in recent years as a way to describe the dynamics of large scale systems in an accessible way. In dynamical systems the problem of stabiltity and the importance of Lyapunov theory for the characterization of stability properties is well understood. In this talk we will discuss several aspects of Lyapunov theory and the way these are reflected in Koopman theory. This concerns the problem of coercivity of Lyapunov functions. Conley's theorem, domains of attraction and maximal Lyapunov functions, Zubov's method and smoothing. We will also discuss applications for control-affine control systems as a special example of skew product flows and the properties of robust Lyapunov functions.

Datum: **Donnerstag, 3. Februar 2022**
Zeit: **15:15 Uhr**

Der Vortrag findet über das Videokonferenzsystem „Zoom" statt.

Ansprechpartner: Prof. Dr. Ralph Chill

Der virtuelle Raum ist über folgenden Link erreichbar:
https://tu-dresden.zoom.us/j/89887698744?pwd=TVR3djhXNkV2U1ZFMTJ3czBOd3c4dz09
Meeting ID: 898 8769 8744 , Passcode: @8%qq2

Alle Interessenten sind herzlich eingeladen.