Fakultät Mathematik   Dresden, 19. Mai 2022
Institut für Analysis

Im

Oberseminar Analysis

hält

Dr. **Michele Zaccaron**

Università degli Studi di Padova, Dipartimento di Matematica

einen Vortrag zum Thema

Spectral sensitivity analysis of electromagnetic cavities

Abstract:
The study of electromagnetic cavities is quite important in applications, for example in designing cavity resonators or shielding structures for electronic circuits. In this talk we consider an eigenvalue problem arising from time-harmonic Maxwell's equations involving the curl curl operator in the context of perfectly conducting cavities. We discuss the dependence of the eigenvalues of the problem under consideration with respect to perturbations of the shape of the cavity. We present Hadamard-type formulas for the derivatives of the eigenvalues and apply them to certain constrained optimization problems. We also discuss the issue of spectral stability, providing sufficient and non-trivial conditions on the perturbations for which the spectrum is stable. Finally, we focus on perturbations of the electric permittivity parameter of the material filling the cavity, showing the so-called generic simplicity of the spectrum.
This talk is based on joint work with Pier Domenico Lamberti and Paolo Luzzini.

Datum: **Freitag (!), 3. Juni 2022**
Zeit: **15:15 Uhr**
Raum: vorauss. **WIL C 129**

Der Vortrag ist zeitgleich auch über das Videokonferenzsystem „Zoom" abrufbar.
Der virtuelle Raum ist über folgenden, bereits bekannten Link erreichbar:
https://tu-dresden.zoom.us/j/89887698744?pwd=TVR3djhXNkV2U1ZFMTJ3czBOd3c4dz09
Meeting ID: 898 8769 8744, Passcode: @8%qq2

Ansprechpartner: PD Dr. Dirk Pauly

Alle Interessenten sind herzlich eingeladen.