Fakultät Mathematik   Dresden, 2. Juni 2022
Institut für Analysis

Im

Oberseminar Analysis

hält

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einen Vortrag zum Thema

Local eventual positivity and general remarks on higher-order uniformly elliptic operators

Abstract:
It is a classic result from operator theory that the semigroup generated by a uniformly elliptic operator of order higher than 2 cannot be positivity preserving. However, in the case of the biharmonic heat equation on $\mathbb{R}^N$, a more subtle aspect, known *as local eventual positivity*, was investigated by Gazzola and Grunau in 2008. Briefly stated, while positivity of the solution is not globally preserved, it is eventually attained on compact subsets. This result was extended recently by L. Ferreira and V. Ferreira to polyharmonic heat equations. In this talk, I will present various aspects of local eventual positivity, including a snapshot of work in collaboration with D. Daners and J. Glück on the biharmonic equation on infinite cylinders. The situation on bounded domains is now rather well understood in an operator-theoretic framework, due to papers by S. Arora, D. Daners, J. Kennedy and J. Glück. However, the spectral theory employed thus far does not work for equations on unbounded domains. I will hence discuss possible new directions for studying local eventual positivity for equations governed by general uniformly elliptic operators of order $2m$ on $\mathbb{R}^N$, and also make some remarks regarding general unbounded domains.

Datum: **Montag (!), 13. Juni 2022**
Zeit: **10:00 Uhr**
Raum: **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: Prof. Dr. Ralph Chill

Alle Interessenten sind herzlich eingeladen.