

Einladung

Würzburger Mathematisches Kolloquium

Julius-Maximilians-Universität Würzburg • Institut für Mathematik

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Von Neumann's Inequality on the Disc and on the Ball

Donnerstag, 08. Dezember 2022 • 14:15 Uhr

Seminarraum SE41 • Forschungsbau (Emil-Fischer-Straße 41, 97074 Würzburg)

Der Vortrag wird auch als Zoom-Meeting übertragen: go.uni-wue.de/ifmcolloquium-zoom

Abstract. von Neumann's inequality provides a fundamental link between analytic functions on the unit disc and contraction matrices, or more generally contraction operators on Hilbert space. It asserts that if T is a contraction and p is a polynomial, then

$$\|p(T)\| \leq \sup\{|p(z)| : |z| \leq 1\}.$$

The multivariable setting turns out to be significantly more complicated. In particular, it is known that the naive version of von Neumann's inequality on the Euclidean unit ball is false.

I will talk about the original inequality and some of the challenges in several variables. Moreover, I will mention a multivariable inequality for matrices, with constants depending on the size of the matrix. Based in part on joint work with Stefan Richter and Orr Shalit.

