universität wien
Fakultät für Mathematik

EINLADUNG

zum

HABILITATIONSVORTRAG

Dr. Johannes Schleischitz
(Middle East Technical University - Northern Cyprus Campus)

“Diophantine approximation on manifolds and Wirsing’s problem”

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Abstract:
After a brief introduction to basic problems and concepts of Diophantine approximation in a broad sense, the talk will specialize on the dependent variable theory, or equivalently restricting the vectors to be approximated to manifolds in Euclidean spaces of arbitrary dimension. Particular emphasis will be on a special class of intensely studied curves, called Veronese curves. Their investigation is in particular suggested by their close connection to a famous open problem by Wirsing dating back to 1961. Roughly speaking, it asks whether the classical Theorem of Dirichlet on approximation of real numbers by rational numbers can be generalized to the setting of approximation by algebraic numbers of higher degree. A major result from the habilitation thesis (jointly with D. Badziahin) claims a significantly improved lower bound for the associated exponent of approximation defined by Wirsing himself. We state this result, and then go on to introduce some more classical exponents of Diophantine approximation going back to K. Mahler and Bugeaud & Laurent, partly closely related to Wirsing’s problem again, but also of independent interest. We present selected results on these exponents, some of them due to the presenter. This includes equivalent variants of Mahler’s classification of transcendental real numbers into the classes S, T, U, in terms of (sequences of) other exponents of approximation than the one used by Mahler. (For time purposes, results on fractals from the thesis will be omitted the talk.)

Freitag, 31. März 2023
10:00 Uhr – 10:45 Uhr

Fakultät für Mathematik
Oskar-Morgenstern-Platz 1
HS 09, 1 OG.

Christian Krattenthaler
Radu Bot