universität wien

Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 30. November 2022
Sky Lounge

EINLADUNG

Menachem Magidor
(Hebrew University of Jerusalem)

"Regularity properties of subsets of the real line and other polish spaces"

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Abstract:
Using the axiom of choice one can construct set of reals which are pathological in some sense. Similar constructions can produce such "pathological" subsets of any non-trivial Polish space (= a complete separable metric space). Typical examples of "pathology" is the set being non-measurable, lacking the property of Baire (=not equivalent to an open set modulo meager set), being a counter example to generalizations of Ramsey theorem.
A subset of the Baire space N^N is "pathological" if in the associated game, no player has a winning strategy. A prevailing paradigm in Descriptive Set Theory is that sets that has a "simple description" should not be pathological. Evidence for this maxim is the fact that Borel sets are not pathological in any of the senses described above. In this talk we shall present a notion of "super regularity" for subsets of a Polish space, the family of universally Baire sets.
The universally Baire sets typically do not show the "pathologies" we listed above, especially if one assumes the existence of large cardinals. We shall try to describe the deep impact that the existence of the large cardinals has on the structure of definable sets of reals and universally Baire sets.
The talk should be accessible to a wide mathematical audience.

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Radu Ioan Bot
Vera Fischer