**FAKULTÄT FÜR MATHEMATIK**
Dekan Univ.-Prof. Dr. Christian Krattenthaler

Einladung zur öffentlichen Defensio von

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Thema der Dissertation:

## Some cardinal invariants of the generalized Baire spaces

Abstract: The central topic of this talk is the well-known *Cardinal invariants of the continuum* and it is divided in two parts: In the first one we focus on the generalization of some of these cardinals to the generalized Baire spaces $\kappa^\kappa$, when $\kappa$ is a regular uncountable cardinal. First, we present a generalization of some of the cardinals in Cichoń's diagram to this context and some of the provable relationships between them. Further, we study their values in some generic extensions corresponding to $<\kappa$-support and $\kappa$-support iterations of generalized classical forcing notions. We point out the similarities and differences with the classical case and explain the limitations of the classical methods when aiming for such generalizations. Second, we study a specific model where the ultrafilter number at $\kappa$ is small, $2^\kappa$ is large and in which a larger family of cardinal invariants can be decided and proven to be $<2^\kappa$.

The second part deals exclusively with the countable case: We present a generalization of the method of matrix iterations to find models where various constellations in Cichoń's diagram can be obtained and the value of the almost disjointness number can be decided. The method allows us also to find a generic extension where seven cardinals in Cichoń's diagram can be separated.

Prüfungssenat:

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