

THE INFLUENCE OF CLOSED MAXIMALITY PRINCIPLES ON GENERALIZED BAIRE SPACES

PHILIPP LÜCKE

ABSTRACT. Given an uncountable regular cardinal κ , we say that a set of functions from κ to κ is a Σ_1^1 -subset of ${}^\kappa\kappa$ if it is definable over the structure $\langle H(\kappa^+), \in \rangle$ by a Σ_1 -formula with parameters. It is well-known that many basic and interesting questions about such sets are not decided by the axioms of ZFC plus large cardinal axioms.

In my talk, I want to present different extensions of ZFC that settle many of those questions by providing a nice structure theory for the class of Σ_1^1 -subsets of ${}^\kappa\kappa$ in the case where κ is an uncountable cardinal with $\kappa = \kappa^{<\kappa}$. These axioms are variants of the *maximality principle* introduced by Jonathan Stavi and Jouko Väänänen and later rediscovered by Joel Hamkins.

MATHEMATISCHES INSTITUT, RHEINISCHE FRIEDRICH-WILHELMS-UNIVERSITÄT BONN,
ENDENICHER ALLEE 60, 53115 BONN, GERMANY
E-mail address: `pluecke@uni-bonn.de`