THE INFLUENCE OF CLOSED MAXIMALITY PRINCIPLES ON GENERALIZED BAIRE SPACES

PHILIPP LÜCKE

ABSTRACT. Let κ be an uncountable regular cardinal with $\kappa = \kappa^{<\kappa}$ and let $^\kappa\kappa$ denote the set of all functions $f : \kappa \to \kappa$. A subset of $^\kappa\kappa$ is a $\mathbf{\Sigma}_1^1$-*subset* if it is definable in the structure $\langle H(\kappa^+), \in \rangle$ by a Σ_1-formula with parameters.

It is a well-known phenomenon that many basic and interesting questions about $\mathbf{\Sigma}_1^1$-subsets of $^\kappa\kappa$ are independent from the axioms of set theory plus large cardinal axioms. In my talk, I want to present three examples of such questions and then introduce a class of forcing axioms that decide them. 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@math.uni-bonn.de