Combinatorial κ-reals in the higher Baire space

Tristan van der Vlugt

Abstract

For κ a regular uncountable cardinal, we may consider the *higher Baire space* $^{\kappa}\kappa$ as a generalisation of the *classical Baire space* $^{\omega}\omega$. Elements of $^{\kappa}\kappa$ are called κ-reals. In this talk we will look at κ-reals in forcing extensions $\mathbf{W}$ with combinatorial properties over a ground model $\mathbf{V}$. This generalises concepts such as dominating, unbounded or eventually different reals to the higher context of $^{\kappa}\kappa$.

We will analyse which forcing notions add which kinds of κ-reals and discuss the preservation (under iterations or products) of not adding a κ-real of a certain type. Frequently, large cardinal assumptions about κ are necessary to prove such results.