

FORCING AND COMBINATORICS OF VAN DOUWEN FAMILIES

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A family of eventually different reals is called Van Douwen if every infinite partial function agrees infinitely often with one of its members. This is a combinatorial strengthening of the notion of a maximal eventually different family. Raghavan proved in 2010 that there always is a Van Douwen family of size continuum. I will present some recent results related to these Van Douwen families; in particular, I will show that the set of all possible sizes of Van Douwen families is closed under singular limits. One of the main open questions in this context is the consistency of a maximal eventually different family smaller than any Van Douwen family (i.e. the consistency of $\mathfrak{a}_e < \mathfrak{a}_v$). Towards this end (while still open), I will also present some results regarding forcing indestructibility of non Van Douwen families.