

ON THE DEFINABILITY OF ALMOST DISJOINT FAMILIES AT UNCOUNTABLE CARDINALS

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ABSTRACT. Motivated by a classical result of Mathias that shows that no infinite maximal almost disjoint family of sets of natural numbers can be analytic, we study the definability of almost disjoint families at higher cardinals. We show that, if κ is a measurable limit of measurable cardinals and A is a subset of $\mathcal{P}(\kappa)$ of cardinality greater than κ that is definable by a Σ_1 -formula with parameters in $V_\kappa \cup \{\kappa\}$, then A contains two distinct elements whose intersection is unbounded in κ . In addition, we show that, in the presence of large cardinals, an analogous result holds for ω_1 .

This is joint work in progress with Sandra Müller (Vienna).