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Definable maximal discrete sets, Ramsey theory and forcing

Maximal orthogonal families of measures, maximal cofinitary groups: these are two examples of maximal discrete sets. As their existence relies on the axiom of choice, set theory studies the question of whether such families can be definable.

This can be the case in forcing extensions of the constructible universe, and perhaps surprisingly, even in extensions where the continuum is large. This follows from a (new) Ramsey theoretic theorem.

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