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Small almost disjoint families and their applications

This is joint work with Antonio Avilés and Witold Marciszewski.

We consider the smallest possible size an almost disjoint familiy $\mathcal{A}$ of subsets of ω such that, for a given n, $\mathcal{A}$ can be decomposed into n disjoint pieces that cannot be separated.

Such families are applicable to a problem which compact spaces K can be extended to a compact space of the form $K \cup \omega$ so that there is no bounded extension operator $C(K) \to C(K \cup \omega)$. This in turn, is a tool of constructing nontrivial twisted sums of some Banach spaces.