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Killing ideals softly

Joint work with Lyubomyr Zdomskyy.

We say that a forcing notion $\mathbb{P}$ $+$-*destroys* a Borel ideal $\mathcal{J}$ if $\mathbb{P}$ adds an $\dot{H} \in \mathcal{J}^+ = \mathcal{P}(\omega) \setminus \mathcal{J}$ such that $|A \cap \dot{H}| < \omega$ for every $A \in \mathcal{J}^V$.

In this talk, I will discuss (a) which ideals can be $+$-destroyed, (b) examples of ideals which can be destroyed (that is, when we require only $\dot{H} \in [\omega]^\omega$) without being $+$-destroyed, also examples when destruction implies $+$-destruction, and (c) the cardinal invariants associated to $+$-destruction of ideals.

Furthermore, I will present a combinatorial characterization of $+$-destructibility of ideals by forcing notions of the form $\mathbb{P}_I$.