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A Hilton-Milner theorem for unions of cliques

The Hilton-Milner theorem tells us about the maximum size for a family of intersecting sets, under the condition that the intersection of the sets is nonempty. Recall that the Erdős-Ko-Rado Theorem says that the absolute maximum size for a family of intersecting sets arises when the sets do all share a common element, so the Hilton-Milner theorem provides the best possible bound for any family that isn't just a subfamily of an EKR family. There is a significant gap between these bounds, which can prove very useful.

I will present more about this background, and discuss some recent results that involved producing a Hilton-Milner type theorem for independent sets in a union of cliques. This talk covers joint work with Karen Gunderson, Karen Meagher, Raghu Pantangi, and Mahsa Shirazi. Unfortunately for us, our results were pre-empted by a similar paper by Huajun Zhang and Huihui Zhang, which is available in *Discrete Math*.