Combinatorics Seminar

An upper bound on the size of a k-uniform family with covering number k

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Abstract: Let $r(k)$ denote the maximum number of edges in a k-uniform intersecting family with covering number k. Erdős and Lovász proved that $\lfloor k!(e-1) \rfloor \leq r(k) \leq k^k$. Frankl, Ota, and Tokushige improved the lower bound to $r(k) \geq (k/2)^{k-1}$, and Tuza improved the upper bound to $r(k) \leq (1 - e^{-1} + o(1))r^r$. We establish that $r(k) \leq (1 + o(1))k^{k-1}$. In this talk, we will present a complete self-contained proof (of the somewhat weaker result) that $r(k) \leq (\log k)k^{k-1}$. This is joint work with Andrii Arman.

Monday, April 18, 2016, 4:00 pm
Mathematics and Science Center: W301

Mathematics and Computer Science
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