

COLLOQUIUM

Extremal problems on optimizing the number of nonnegative subsets

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Abstract: Extremal combinatorics studies the maximum or minimum possible size of a combinatorial structure satisfying certain properties. It is one of the central themes of modern discrete mathematics, and has numerous natural connections to other areas including probability, number theory and theoretical computer science. As an example, in this talk I will discuss some recent progress on a fifty-year-old conjecture of Erdos on hypergraph matching, and describe its relation with several other extremal problems on optimizing the number of nonnegative. Our work settles conjectures of Manickam, Miklos and Singhi, and of Tsukerman.

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