

Tenseurs : information quantique, complexité et combinatoires quantiques

Tensors: Quantum Information, Complexity and Combinatorics

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Random tensors and skeletons of octohedra

The Zarankiewicz is a central problem in extremal combinatorics which, in its most general formulation, asks for the maximum number of edges that a d -uniform hypergraph on a fixed number of vertices can have, provided that it does not contain any copy of a complete d -partite hypergraph. One of the many reasons this problem is rather special among Turán-type problems is that the extremal graphs in question, whenever available, always seem to have to be of algebraic nature, in particular witnesses to basic intersection theory phenomena. In this talk, we will discuss some recent progress and various new open questions which arise around one of its most tantalizing particular cases: the problem of determining the extremal number of d -dimensional octohedron, also known as the Erdős box problem.