
* Princeton Discrete Math Seminar *

Date: Wednesday, March 23, 2:15 in Fine Hall 224

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ETH

Odd independent transversals are odd

Abstract

In 1975 Bollobás, Erdős and Szemerédi raised the following question. Determine the smallest integer $\Delta(r, n)$, such that there exists an r -partite graph on rn vertices (n in each partite set) with maximum degree $\Delta(r, n)$, which does not contain an independent transversal. (A set of vertices is an independent transversal of the r -partite graph if it is an independent set and has exactly one vertex of each partite set.)

Despite its somewhat artificial appearance this question pops up in several other combinatorial problems and was investigated by numerous researchers. Another interesting feature is the variety of methods (combinatorial, probabilistic, topological) that has been used to attack it. In the talk we concentrate on describing these approaches and indicate a complete solution. We also hope to discuss the related open problems. The talk represents joint works with P. Haxell and G. Tardos.