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Some Recent Results in the Classification of Edge-Regular Graphs

DATE: Friday, January 9, 2015
TIME: 3:00 p.m. – 4:00 p.m.
PLACE: Shelby Center 218

A simple, d-regular graph on n vertices is said to be edge-regular if there exists a nonnegative integer \( \lambda \) such that every pair of adjacent vertices have exactly \( \lambda \) common neighbors. In any edge-regular graph, there is a parameter \( p = n - 2d + \lambda \) that is a measure of the common non-neighbors of any adjacent pair of vertices. It has recently been shown that for an edge regular graph with parameters \( n, d, p \), where \( \lambda > 0 \), then \( n \leq 3\lambda + 3p \). This is a sharp inequality; moreover, the extremal graphs for this inequality are unique for special values of \( \lambda \) and \( p \). We overview some of the results centered around this inequality and some questions for future research.

Refreshments will be served at 2:30 p.m. in SC 201 suite landing