VCU Discrete Mathematics Seminar

On the Holroyd-Talbot Conjecture

Prof Glenn Hurlbert
(VCU!)

Wednesday, Apr. 6
1:00-1:50

Zoom! @ `https://vcu.zoom.us/j/92975799914`
`password=graphs2357`

A family of sets is called *intersecting* if every pair of its sets intersect. An intersecting family is called a *star* if some element is in each of its sets. The Erdős-Ko-Rado Theorem states that if $r \leqslant n/2$ then the largest intersecting family of r-subsets of $[n]$ is a star.

A graph version considers all independent r-subsets of vertices of a graph G. Then G is called r-EKR if no intersecting subfamily is larger than the largest star. In this context, the EKR theorem states that the empty graph on n vertices is r-EKR for $r \leqslant n/2$.

In 2005 Holroyd and Talbot conjectured that every graph G is r-EKR for $r \leqslant \mu(G)/2$, where $\mu(G)$ is the *minimax independence number* (also *independent domination number*) of G: the minimum size of a maximal independent set of G.

In this talk we will review some historical results, present some new results, and share some open problems.

For the DM seminar schedule, see:

`https://go.vcu.edu/discrete`