VCU Discrete Mathematics Seminar
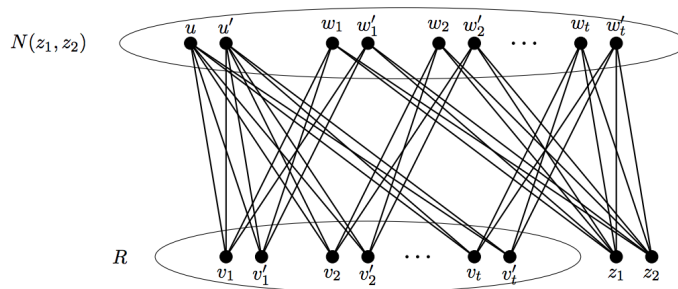
The Turán number of blow-ups of graphs

Oliver Janzer
ETH Zürich

Wednesday, Feb. 10
1:00-1:50

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

For a graph H, the Turán number (or extremal number) ex(n,H) denotes the maximum number of edges in an H-free graph on n vertices. For bipartite graphs H, this function is generally not well understood. For a graph F and a positive integer r, the r-blowup of F is the graph obtained by replacing the vertices and edges of F by independent sets of size r and copies of $K_{r,r}$, respectively.

We make a general conjecture for an upper bound on ex(n,H) when H is a blow-up of another graph F. We prove this conjecture when F is a tree and for the 2-blowup of the hexagon. We also make some progress on the case where H is an arbitrary blow-up of a cycle.

Partially joint work with Andrzej Grzesik, Abhishek Methuku and Zoltán Lóránt Nagy.

For the DM seminar schedule, see:

`https://www.people.vcu.edu/~nobushaw/dms.html`