VCU Discrete Mathematics Seminar
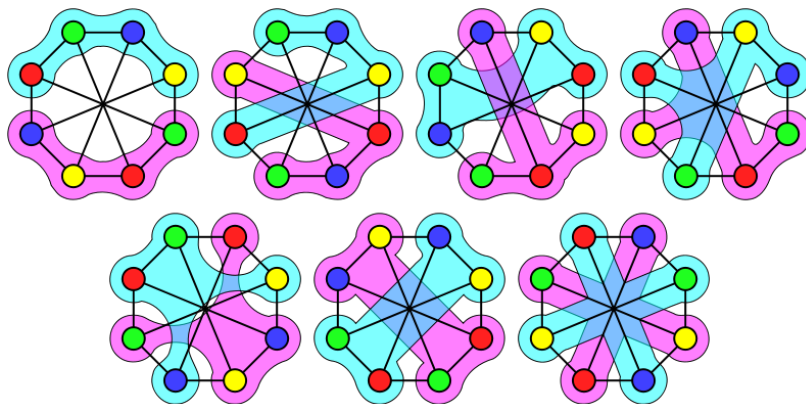
Some special cases of the
strong coloring conjecture

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Wednesday, Oct. 9
1:00-1:50
4145 Harris Hall

Haxell proved that if H is a graph of maximum degree at most Δ which is augmented by adding any number of vertex-disjoint copies of $K_{2\Delta}$, then the resulting graph G has an independent set hitting each of the added cliques. The "strong coloring conjecture" states that, under these conditions, a much stronger conclusion holds, namely that $\chi(G) = 2\Delta$. In the case where the added cliques partition H, we are asking not just for a single independent set that hits all the cliques, but for a partition of the vertex set into such independent sets. When $\Delta = 1$ this is just the statement that every 2-edge-colorable graph is bipartite, but even for $\Delta = 2$ the problem has stood open since at least the early 2000s. We will discuss some recent partial results on the $\Delta = 2$ case of the conjecture. This is joint work with Jessica McDonald.

For the DM seminar schedule, see:

http://www.people.vcu.edu/~dcranston/DM-seminar/