VCU Discrete Mathematics Seminar

Fat-triangle Linkage and Applications to Graph Linkage Problems

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Tuesday, Oct. 22
12:30-1:20 (***special day and time!***)
4145 Harris Hall

For a multigraph H, a graph G is H-linked if every injective mapping $\phi : V(H) \to V(G)$ can be extended to an H-subdivision in G. We study the minimum connectivity required for a graph to be H-linked. A k-fat-triangle F_k is a multigraph with three vertices and a total of k edges. We determine a sharp connectivity requirement for a graph to be F_k-linked. In particular, any k-connected graph is F_k-linked when F_k is connected. A kite is the graph obtained from K_4 by removing two edges at a vertex. As a nontrivial application of F_k-linkage, we then prove that every 8-connected graph is kite-linked, which shows that the required connectivity for a graph to be kite-linked is 7 or 8. We additionally study H-linkage problems when H is either K_4^- or K_4. This is joint work with Runrun Liu and Gexin Yu.

For the DM seminar schedule, see:

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