VCU Discrete Mathematics Seminar

Nowhere-zero 3-Flows in Graphs and Signed Graphs

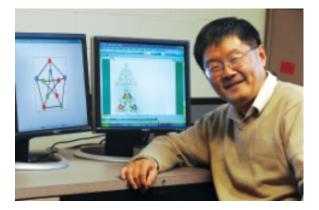
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Tuesday, March 24 12:30–1:20 4145 Harris Hall

Tutte conjectured that *every* 4-*edge-connected graph admits a nowhere-zero* 3-*flow.* In this talk, we present two recent results about integer flows for graphs and signed graphs.

Tutte observed that every nowhere-zero k-flow on a plane graph gives rise to a k-vertex-coloring of its dual, and vice versa. Thus nowhere-zero integer flow and graph coloring can be viewed as dual concepts. Jaeger further shows that if a graph G has a face-k-colorable 2-cell embedding in some *orientable* surface, then it has a nowhere-zero k-flow. However, if the surface is *nonorientable*, then a face-k-coloring corresponds to a nowhere-zero k-flow in a *signed graph* arising from G. Graphs embedded in orientable surfaces are therefore a special case that the corresponding signs are all positive.

We will discuss two recent results which extend a recent breakthrough by Carsten Thomassen. (Joint work with Y.Z. Wu, D. Ye and W. Zang.)



For more information on our fall schedule, see: http://www.people.vcu.edu/~dcranston/DM-seminar/