Combinatorics Seminar

c-Sum Flows in Graphs

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Abstract: Let G be a graph. For a real number c, a c-sum flow of G is an assignment of non-zero real numbers to the edges of G such that the sum of values of all edges incident with each vertex is c. Let k be a natural number. A c-sum k-flow is a c-sum flow whose absolute values from the set $\{1,...,k\}$. In this talk, we present known results on c-sum k-flows of graphs and propose several conjectures.

The four-color theorem states that any map in a plane can be colored using four-colors in such a way that regions sharing a common boundary (other than a single point) do not share the same color. Nowhere-zero flows in directed graphs are important because they have nice relations with four color theorem. Here, we provide a bridge between nowhere-zero flows in directed graphs and 0-sum flows in undirected graphs.

Monday, July 28 at 3:00 PM in SEO 427