

Orientations of graphs

Carsten Thomassen

Technical University of Denmark

`ctho@dtu.dk`

Let Γ be an abelian group and F a set of elements of Γ . We consider the following general problem: Given a graph G , is it possible to give every edge a direction and an element from F such that, at every vertex, the in-sum equals the out-sum. Tutte's flow conjectures and the $(2 + \epsilon)$ -flow conjecture are instances of this problem. We discuss other instances as well and show when sufficiently large edge-connectivity guarantees an F -flow.