

Discrete Mathematics & Combinatorics

A proof of the Barát-Thomassen-Conjecture

Martin Merker

DTU, Danmark

Barát and Thomassen conjectured in 2006 that for every tree T there exists a natural number $k(T)$ such that the following holds: If G is a $k(T)$ -edge-connected simple graph with size divisible by the size of T , then G can be edge-decomposed into subgraphs isomorphic to T . Previously, the conjecture has been verified for certain classes of trees such as paths, stars, and a class of bistars. We can now prove the conjecture for all trees by combining recent results on the existence of modulo k -orientations with probabilistic methods. I will give an overview of the full proof and discuss the tools that are used.

This is joint work with Julien Bensmail, Ararat Harutyunyan, Tien-Nam Le, and Stéphan Thomassé.