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Decomposing highly connected graphs into paths of any given length

In 2006, Barát and Thomassen made the following conjecture: for each tree T, there exists a natural number k_T such that, if G is a k_T-edge-connected graph and $|E(T)|$ divides $|E(G)|$, then G can be edge-decomposed into copies of T. In a series of papers, starting in 2008, Thomassen verified this conjecture for stars, some bistars, paths of length 3, and paths whose length is a power of 2. In 2014, we verified this conjecture for paths of length 5, and subsequently, for paths of any given length. In this talk we address this last result. We note that further results on this conjecture have been obtained in the last two years: Bensmail, Harutyunyan, Le and Thomassé (2015) proved this conjecture for paths, using a different approach and weakening the condition on high edge-connectivity; more recently, these authors, together with M. Merker proved the conjecture.

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