

On degree sequences forcing the square of a Hamilton cycle

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Many famous results in extremal graph theory give minimum degree conditions that force some substructure. For example, Dirac's classical theorem characterises the minimum degree that ensures a Hamilton cycle in a graph. However, sometimes it is possible to obtain stronger results via *degree sequence* conditions. For example, Pósa gave a significant strengthening of Dirac's theorem: if $d_1 \leq \dots \leq d_n$ is the degree sequence of G and $d_i > i$ for all $1 \leq i < n/2$, then G contains a Hamilton cycle. A famous conjecture of Pósa gave a minimum degree condition that ensures a graph contains the square of a Hamilton cycle. This was proved for large n by Komlós, Sárközy and Szemerédi. In this talk we consider a degree sequence analogue of this theorem. This is joint work with Andrew Treglown.