C. Robin : Hamiltonian degree condition for tough graphs

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A graph G is hamiltonian if there exists a cycle in G containing all vertices of G exactly once. A graph G is t-tough if for all subsets of vertices S, the number of connected components in $G - S$ is at most $\frac{|S|}{t}$.

We extended the Theorem of Hoàng [2] by proving the following :

Let G be a graph with degree sequence $d_1, d_2, \ldots, d_n$ and let t be a positive integer at most 4. If G is a t-tough and if $\forall i, t \leq i < \frac{n}{2}, d_i \leq i \Rightarrow d_{n-i+t} \geq n-i$ then G is hamiltonian.

To do this we extend the closure lemma due to Bondy and Chvàtal [1].

Références

[1] J. A. Bondy and V. Chvàtal, *A method in graph theory*, Discrete Mathematics (1976), 15(2) :111-135.

[2] C. T. Hoàng, *Hamiltonian degree conditions for tough graphs*, Discrete Mathematics (1995), 142(1-3) :121-139.