

**Zbl 374.05037**

**Erdős, Paul; Hobbs, Arthur M.**

*Hamiltonian cycles in regular graphs of moderate degree.* (In English)

**J. Comb. Theory, Ser. B 23, 139-142 (1977). [0095-8956]**

It is shown that if  $k$  is an integer no less than 3, and if  $G$  is a 2-connected graph with  $2n - a$  vertices,  $a \in \{0, 1\}$ , which is regular of degree  $n - k$ , then  $G$  is Hamiltonian if  $a = 0$  and  $n \geq k^2 + k + 1$  or if  $a = 1$  and  $n \geq 2k^2 - 3k + 3$ . Subsequently, *B.Bollobás* and *A.M.Hobbs* have proved a stronger result in [Ann. Discrete Math. 3, 43-49 (1978; Zbl 376.05036)] , and more recently, *W.Jackson* has obtained the best possible result that a 2-connected  $k$ -regular graph with at most  $3k$  vertices is Hamiltonian [J. Comb. Theory, Ser. B 29, 27-46 (1980; Zbl 432.05037)] .

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Classification:

05C35 Extremal problems (graph theory)