

Hamiltonian properties in k -partite graphs

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A graph G of order p is called **chorded pancyclic** if for every integer t for which $4 \leq t \leq p$, the graph G contains a t -cycle with a chord. We show that for all integers $k \geq 3$ and $n \geq 1$, every balanced k -partite graph with kn vertices and at least

$$\frac{(k^2 - k)n^2 - 2n(k - 1) + 4}{2}$$

edges is chorded pancyclic. We also investigate a similar result for general k -partite graphs.

Keywords: chord, chorded pancyclic, (balanced) k -partite graphs