

GREGARIOUS KITE FACTORIZATION OF TENSOR PRODUCT OF COMPLETE GRAPHS

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Abstract

A kite factorization of a multipartite graph is said to be gregarious if every kite in the factorization has all its vertices in different partite sets. In this paper, we show that there exists a gregarious kite factorization of $K_m \times K_n$ if and only if $mn \equiv 0 \pmod{4}$ and $(m-1)(n-1) \equiv 0 \pmod{2}$, where \times denotes the tensor product of graphs.

Keywords: tensor product, kite, decomposition, gregarious factor, factorization.

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