



DiMaS

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Decompositions of complete bipartite graphs into prisms

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A *generalized prism*, or more specifically an $(0, j)$ -prism of order $2n$ (where n is even) is a cubic graph consisting of two cycles u_0, u_1, \dots, u_{n-1} and v_0, v_1, \dots, v_{n-1} joined by two sets of spokes, namely $u_1v_1, u_3v_3, \dots, u_{n-1}v_{n-1}$ and $u_0v_j, u_2v_{j+2}, \dots, u_{n-2}v_{j-2}$.

The question of factorization of complete bipartite graphs into $(0, j)$ -prisms was completely settled by the author and S. Cichacz. Some partial results on decompositions of complete bipartite graphs and complete graphs have also been obtained by them and P. Kovar and S. Dib, respectively. The problem of decomposition of complete graphs into prisms of order 12 and 16 was completely solved by the author with S. Cichacz and M. Meszka and presented at IWONT 2012.

We will present a complete solution for the decomposition of complete bipartite graphs into $(0, 0)$ -prisms (that is, the usual prisms).