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**Decompositions of $K_{m,n}$ and $K_n$ into cubes. (English summary)**
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A set $\{G_1, \cdots, G_t\}$ of graphs is said to be a $G$-decomposition of $H$ if $G_i$ is isomorphic to $G$ for $1 \le i \le t$ and $\{E(G_1), \cdots, E(G_t)\}$ is a partition of $E(H)$. $G$-decompositions of $K_n$ and of $K_{x,y}$ have been extensively studied [see, e.g., F. Harary and R. W. Robinson, J. Graph Theory **9** (1985), no. 1, 67–86; MR0785650; C. C. Lindner and C. A. Rodger, in *Contemporary design theory*, 325–369, Wiley, New York, 1992; see MR1178497].

The $d$-cube $Q_d$ is the simple graph with vertex set being the set of all binary $d$-tuples, and with edge set consisting of all pairs of vertices which differ in exactly one coordinate. $Q_d$-decompositions of $K_n$ were studied by A. Kotzig [J. Combin. Theory Ser. B **31** (1981), no. 3, 292–296; MR0638285] who settled the existence problem when $d$ is even, and when $d$ is odd and $n$ is odd. In this paper the existence problem is settled for $Q_d$-decompositions of $K_{x,y}$ when $d \in \{3, 4\}$, and for $Q_3$-decompositions of $K_n$.

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