DECOMPOSING THE COMPLETE GRAPH INTO HAMILTONIAN PATHS (CYCLES) AND 3-STARS

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Abstract

Let \( H \) be a graph. A decomposition of \( H \) is a set of edge-disjoint subgraphs of \( H \) whose union is \( H \). A Hamiltonian path (respectively, cycle) of \( H \) is a path (respectively, cycle) that contains every vertex of \( H \) exactly once. A \( k \)-star, denoted by \( S_k \), is a star with \( k \) edges. In this paper, we give necessary and sufficient conditions for decomposing the complete graph into \( \alpha \) copies of Hamiltonian path (cycle) and \( \beta \) copies of \( S_3 \).

Keywords: decomposition, complete graph, Hamiltonian path, Hamiltonian cycle, star.

2010 Mathematics Subject Classification: 05C70, 05C38.

References


doi:10.1007/s00373-003-0530-3


doi:10.1016/0012-365X(79)90034-7

Received 12 January 2018
Revised 14 May 2018
Accepted 14 May 2018