

## ON THE EDGE-HYPER-HAMILTONIAN LACEABILITY OF BALANCED HYPERCUBES

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### Abstract

The balanced hypercube  $BH_n$ , defined by Wu and Huang, is a variant of the hypercube network  $Q_n$ , and has been proved to have better properties than  $Q_n$  with the same number of links and processors. For a bipartite graph  $G = (V_0 \cup V_1, E)$ , we say  $G$  is edge-hyper-Hamiltonian laceable if it is Hamiltonian laceable, and for any vertex  $v \in V_i, i \in \{0, 1\}$ , any edge  $e \in E(G - v)$ , there is a Hamiltonian path containing  $e$  in  $G - v$  between any two vertices of  $V_{1-i}$ . In this paper, we prove that  $BH_n$  is edge-hyper-Hamiltonian laceable.

**Keywords:** balanced hypercubes, hyper-Hamiltonian laceability, edge-hyper-Hamiltonian laceability.

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