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Hamiltonian paths in some classes of grid graphs. (English) Zbl 1245.05081

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Summary: The Hamiltonian path problem for general grid graphs is known to be NP-complete. In this paper, we give necessary and sufficient conditions for the existence of Hamiltonian paths in L-alphabet, C-alphabet, F-alphabet, and E-alphabet grid graphs. We also present linear-time algorithms for finding Hamiltonian paths in these graphs.

MSC:

05C45 Eulerian and Hamiltonian graphs
05C85 Graph algorithms (graph-theoretic aspects)

Keywords:

linear-time algorithms; L-alphabet; C-alphabet,; F-alphabet; E-alphabet

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