عنوان مقاله:

A spanning union of cycles in rectangular grid graphs, thick grid cylinders and Moebius strips

محل انتشار:

تعداد صفحات اصل مقاله: 26

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خلاصه مقاله:

Motivated to find the answers to some of the questions that have occurred in recent papers dealing with Hamiltonian cycles (abbreviated HCs) in some special classes of grid graphs we started the investigation of spanning unions of cycles, the so-called ۲-factors, in these graphs (as a generalizations of HCs). For all the three types of graphs from the title and for any integer m \geq ۲ we propose an algorithm for obtaining a specially designed (transfer) digraph {\cal D}^*_m. The problem of enumeration of ۲-factors is reduced to the problem of enumerating oriented walks in this digraph. Computational results we gathered for m \leq ۱۷ reveal some interesting properties both for the digraphs {\cal D}^*_m and for the sequences of numbers of ۲-factors.We prove some of them for arbitrary m \geq ۲.

کلمات کلیدی:

Hamiltonian cycles, generating functions, transfer matrix method, ۲-factor

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