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Minimum cycle bases of direct products of graphs with cycles

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Abstract

We construct a minimum cycle basis for the direct product $G \times C_q$ where G is a connected non-bipartite graph, C_q is an odd cycle and $G \times C_q$ is triangle-free. These bases are expressed in terms of the cycle structure of the symmetric digraph on G .

Keywords: Graph direct product, minimum cycle bases, digraphs.

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Minimalne baze ciklov direktnih produktov grafov s cikli

Povzetek

Konstruiramo minimalno bazo ciklov za direktni produkt $G \times C_q$, kjer je G povezan ne-dvodelen, C_q je lih cikel in $G \times C_q$ je brez trikotnikov. Te baze se izražajo s pomočjo ciklične strukture simetričnega digrafa grafa G .

Ključne besede: Direktni produkt grafov, minimalna baza ciklov, usmerjeni grafi.