

On Simply Structured Kernel Bases of Unicyclic Graphs

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Abstract

In this paper all those unicyclic graphs are characterized for which there exists a basis of the kernel that consists only of vectors with entries from $\{-1, 0, 1\}$. Three different characterizations are obtained, based on an algorithmic, an algebraic, and a structural criteria, respectively. Algorithmic construction of such bases is discussed as well.

Keywords: unicyclic, kernel, null space, basis, Gaussian elimination

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