

Distance Matrix of a Multi-block Graph:
Determinant and Inverse
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Abstract

Let G be a simple connected graph with n vertices. The distance matrix of graph G is an $n \times n$ matrix, denoted by $D(G) = [d_{ij}]$, where $d(i, j)$ equals the length of the shortest path between vertices i and j and $d(i, i) = 0$.

A connected graph is called a multi-block graph if each of its blocks is a complete multipartite graph. We compute the determinant and inverse of the distance matrix for a class of multi-block graphs.