

On the algebra of token graphs

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Abstract

Given a graph $G = (V, E)$ and an integer $k \in [1, n-1]$, its *token graph* $F_k(G)$ has vertices corresponding to the k -subsets of V , and two vertices are adjacent when its symmetric difference are the end-vertices of an edge in E . In this talk, we describe some properties of the Laplacian and adjacency matrix of $F_k(G)$. In particular, we study the close relationship between the algebra of $F_k(G)$ with the Bose-Mesner algebra of the Johnson graph $J(n, k)$.