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An Analog of Matrix Tree Theorem for Signless Laplacians

The number of spanning trees in a graph G is given by Matrix Tree Theorem in terms of principal minors of Laplacian matrix of G. We show a similar combinatorial interpretation for principal minors of signless Laplacian Q. We also prove that $\frac{\det(Q)}{4}$ is greater than or equal to the number of odd cycles in G, where the equality holds if and only if G is a bipartite graph or an odd-unicyclic graph.