

Can you hear the shape of a tree?

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Spectral graph theory gives a way to study graph structures by considering the eigenvalues of a matrix derived from a graph. Many questions ask something like “Given a set of eigenvalues associated with a graph, what properties can be recovered about the graph?” In this talk, we consider whether the property “is a tree” can be recovered for several matrices, namely the adjacency, the Laplacian, the signless Laplacian, and the normalized adjacency.