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When the adjacency matrix of a graph is a product of two adjacency matrices?

A graph G is factorizable via the matrix product if the adjacency matrix of G can be written as the product of two adjacency matrices. In this talk, we define the matrix product of two graphs, both algebraically and combinatorially, and identify families of simple graphs whose adjacency matrices admit such factorizations. We also show how spectral methods help characterize factorizable graphs.