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Steve Butler* (butler@iastate.edu). *Hadamard diagonalizable graphs of order at most 36.*

If the Laplacian matrix of a graph has a full set of orthogonal eigenvectors with entries ± 1 , then the matrix formed by taking the columns as the eigenvectors is a Hadamard matrix and the graph is said to be Hadamard diagonalizable. By combination of theoretical tools and computational search all Hadamard diagonalizable graphs through order 36 have been determined. We give an overview of the approach used.

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