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PERTURBATIONS IN A SIGNED GRAPH AND ITS INDEX

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Abstract

In this paper we consider the behaviour of the largest eigenvalue (also called the index) of signed graphs under small perturbations like adding a vertex, adding an edge or changing the sign of an edge. We also give a partial ordering of signed cacti with common underlying graph by their indices and demonstrate a general method for obtaining lower and upper bounds for the index. Finally, we provide our computational results related to the generation of small signed graphs.

Keywords: signed graph, switching equivalence, index, computer search.

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