Matching preclusion and conditional matching preclusion for Cayley graphs generated by transposition trees

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The matching preclusion number of a graph is the minimum number of edges whose deletion results in a graph that has neither perfect matchings nor almost-perfect matchings. For many interconnection networks, the optimal sets are precisely those induced by a single vertex. The conditional matching preclusion number of a graph was introduced to look for obstruction sets beyond those induced by a single vertex. It is defined to be the minimum number of edges whose deletion results in a graph with no isolated vertices that has neither perfect matchings nor almost-perfect matchings. In this paper we find the matching preclusion number and the conditional matching preclusion number as well as the classification of their respective optimal sets for Cayley graphs generated by transposition trees.

Keywords: Interconnection networks, perfect matching, Cayley graphs