Generalized Matching Preclusion for Regular Interconnection Networks

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For a graph with an even number of vertices, the *matching preclusion number* is the minimum number of edges whose deletion results in a graph with no perfect matchings. The *conditional matching preclusion number*, introduced as an extension of the matching preclusion number, has the additional requirement that the resulting graph has no isolated vertices. This talk will discuss results related to a further generalization of this concept, called level 2 matching preclusion. We see sufficient conditions for a graph with girth at least 6 to be level 2 maximally matched and level 2 super matched. We apply these results to the class of pancake graphs, and show that they are level 2 maximally and super matched.

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