Summary: The fractional matching preclusion number of a graph $G$, denoted by $fmp(G)$, is the minimum number of edges whose deletion results in a graph that has no fractional perfect matchings. In this paper, we first give some sharp upper and lower bounds of fractional matching preclusion number. Next, graphs with large and small fractional matching preclusion number are characterized, respectively. In the end, we investigate some extremal problems on fractional matching preclusion number.

MSC:

05C82 Small world graphs, complex networks (graph-theoretic aspects)
05C70 Edge subsets with special properties (factorization, matching, partitioning, covering and packing, etc.)
05C35 Extremal problems in graph theory
68R10 Graph theory (including graph drawing) in computer science
68M10 Network design and communication in computer systems

Keywords:
interconnection networks; fractional perfect matching; fractional matching preclusion number; extremal problem

Full Text: DOI

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