

The n -th MARM: Maximum Red Matching Free of Blue-Red Alternating Cycles in a Complete Blue-Red Bipartite Graph of Degree n

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Last updated on 20 Jan 2011

Given a complete bipartite graph of degree n whose edges are blue or red, find a maximum red matching not appearing in a blue-red alternating cycle.

The n -th MARM can be solved in polynomial time if $n \leq 2$ and is NP-hard if $n = 4$. What is the complexity status of the 3-rd MARM?

References

- [1] D. Oron, G. Steiner, V. G. Timkovsky, The bipartite margin shop and maximum red matchings free of blue-red alternative cycles, *Discrete Optimization* 6 (2009) 299-309.