Abstract

Extending perfect matchings to Hamiltonian cycles in line graphs

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A graph admitting a perfect matching has the Perfect-Matching-Hamiltonian property (for short the PMH-property) if each of its perfect matchings can be extended to a Hamiltonian cycle. In this talk we will present some sufficient conditions for a graph G which guarantee that its line graph $L(G)$ has the PMH-property. In particular, we prove that this happens when G is (i) a Hamiltonian graph with maximum degree at most 3, (ii) a complete graph, or (iii) an arbitrarily traceable graph. Further related questions and open problems will be stated.

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