

Lovász Hamiltonicity Problem

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Abstract

In 1969 László Lovász asked for a construction of a finite connected vertex-transitive graph without a simple path visiting all vertices of the graph i.e. a Hamilton path. A commonly accepted phrasing of his question, based on lack of supporting examples, reads as follows: Does every finite connected vertex-transitive graph have a Hamilton path?

Not only that no connected vertex-transitive graph without a Hamilton path is known to exist, we know of just five connected vertex-transitive graphs without a Hamilton cycle i.e. a simple cycle containing all vertices of the graph.

In this talk I will present a recent result proving that every connected vertex-transitive graph of order a product of two primes, other than the Petersen graph, contains a Hamilton cycle.

This is a joint work with Shaofei Du and Dragan Marušič.