Hamiltonian cycles in connected vertex-transitive graphs

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A Hamiltonian cycle(path) of a graph is a cycle(path) that visits each vertex exactly once. There are 5 known examples of vertex-transitive graphs with no Hamiltonian cycles. In 1969, Lovász asked that is there any finite connected vertex-transitive graph of order more than 3 without a Hamilton path. In fact, Another version of Lovász conjecture states that every finite connected vertex-transitive graph contains a Hamiltonian cycle except the five known examples. In this talk, some recent results on Hamiltonian cycles of connected vertex-transitive graphs will be introduced.

References

[1] S. Du, K. Kutnar and D. Marušič, Resolving the Hamiltonian problem for vertex-transitive graphs of order a product of two primes, *Combinatorica* **41** (2021), 507–543.

[2] K. Kutnar and P. Šparl, Hamilton paths and cycles in vertex-transitive graphs of order 6p, *Discrete Math.* **309** (2009), 5444–5460.