

On 1-Hamiltonian line graphs of claw-free graphs

Taoye Zhang, Penn State University, Worthington Scranton

For an integer $s \geq 0$, a graph G is s -hamiltonian if for any vertex subset $S \subseteq V(G)$ with $|S| \leq s$, $G - S$ is hamiltonian, and G is s -hamiltonian-connected if for any vertex subset $S \subseteq V(G)$ with $|S| \leq s$, $G - S$ is hamiltonian-connected. Thomassen in 1984 conjectured that every 4-connected line graph is hamiltonian. Lai and Shao [J. Graph Theory, 74 (2013), 344-358] proved that for a connected graph G and an integer $s \geq 5$, the line graph $L(G)$ is s -hamiltonian if and only if $L(G)$ is $(s + 2)$ -connected. The result presented in this talk is that the line graph $L(G)$ of a claw-free graph G is 1-hamiltonian-connected if and only if $L(G)$ is 4-connected.

Keywords: 1-Hamiltonian, Hamiltonian Connected, Line Graph, Claw-free graph