

## On $s$ -hamiltonian-connected line graphs

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For an integer  $s \geq 0$ ,  $G$  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 (see [J. Graph Theory, 10 (1986) 309-324]), and Kučzel and Xiong in 2004 conjectured that every 4-connected line graph is hamiltonian connected (see [J. Graph Theory 66 (2011), 152-173]). In this paper we prove the following.

- (i) For  $s \geq 3$ , every  $(s + 4)$ -connected line graph is  $s$ -hamiltonian-connected.
- (ii) For  $s \geq 0$ , every  $(s + 4)$ -connected line graph of a claw-free graph is  $s$ -hamiltonian-connected.