

# Asteroidal Numbers and Hamiltonicity of L1-Graphs

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## **Abstract**

A graph  $G$  is called an L1-graph if, for each triple of vertices  $u, v$ , and  $w$  with  $d(u, v) = 2$  and  $w$  is in  $N(u) \cap N(v)$ ,  $d(u) + d(v)$  is at least  $|N(u) \cup N(v) \cup N(w)| - 1$ . Let  $G$  be a  $k$ -connected ( $k$  is at least 2) L1-graph. If  $an(G)$  is less than or equal to  $k$ , then  $G$  is Hamiltonian or  $G$  is in a special family of graphs, where  $an(G)$  is the asteroidal number of  $G$ .