On locating chromatic number of Mycielski graph

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The *locating chromatic number* of a graph G is defined as the cardinality of minimum resolving partition of the vertex set of G such that every partition does not contain two adjacent vertices, and all vertices have different distance coordinate to all partition classes. In this paper, we consider a Mycielski graph. For a connected graph G of order n with $V(G) = \{v_1, v_2, \ldots, v_n\}$, a *Mycielski graph* of G, denoted by $\mu(G)$, is a graph with $V(\mu(G)) = \{x_i, y_i \mid 1 \leq i \leq n\} \cup \{z\}$ and $E(\mu(G)) = \{x_i x_j, x_i y_j \mid v_i v_j \in E(G)\} \cup \{y_i z \mid 1 \leq i \leq n\}$. In this paper, we determine the sharp lower and upper bounds of the locating chromatic number of the Mycielski graph of any connected graphs G. We also characterize all graphs G where the locating chromatic number of $\mu(G)$ is k, for some positive integers k.