Huiqing Liu* (hqliu@hubu.edu.cn), Wuhan, Hubei prov 430062. Burning number of theta graphs. Preliminary report.

The burning number $b(G)$ of a graph $G$ was introduced by Bonato, Janssen, and Roshanbin [Lecture Notes in Computer Science 8882(2014)] to measure the speed of the spread of contagion in a graph. The graph burning problem is NP-complete even for trees. In this paper, we show that the burning number of any theta graph of order $n = q^2 + r$ with $1 \leq r \leq 2q + 1$ is either $q$ or $q + 1$. Furthermore, we characterize all theta graphs that have burning number $q$ or $q + 1$. (Received January 25, 2019)