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**Shaohui Wang** and **Bing Wei\*** (bwei@olemiss.edu). *Bounds on multiplicative Zagreb indices of  $k$ -trees.*

Let  $G$  be a graph with vertex set  $V(G)$  and edge set  $E(G)$ . The first generalized multiplicative Zagreb index of  $G$  is defined as  $\Pi_{1,c}(G) = \prod_{v \in V(G)} d(v)^c$  for a real number  $c > 0$ , and the second multiplicative Zagreb index is defined as  $\Pi_2(G) = \prod_{uv \in E(G)} d(u)d(v)$ , where  $d(u)$ ;  $d(v)$  are the degrees of the vertices of  $u$  and  $v$ . The multiplicative Zagreb indices have been the focus of considerable research in computational chemistry dating back to Narumi and Katayama in 1980s. In this talk, we will first introduce the generalized multiplicative Zagreb index, and then present some new bounds on the multiplicative Zagreb indices for  $k$ -tree ( $k \geq 1$ ), which extend the results of Gutman for the case when  $k = 1$ . Additionally, we characterize the extremal graphs and determine the exact bounds of these indices of  $k$ -trees, which attain the lower and upper bounds. (Received January 31, 2015)