Yuan, Wei-Gang; Zhang, Xiao-Dong
The second Zagreb indices of graphs with given degree sequences.

Summary: The second Zagreb index of a simple undirected graph $G$ is defined as $M_2(G) = \sum_{uv \in E(G)} d(u)d(v)$, where $d(x)$ is the degree of vertex $x$ in $G$. In this paper, we investigate properties of the extremal graphs with maximum second Zagreb indices with given graphic sequences, in particular graphic bicyclic sequences. Moreover, we obtain the relations of the second Zagreb indices among the extremal graphs with different degree sequences.

Keywords: second Zagreb index; graphic sequence; majorization; bicyclic graph