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Average distance between leaves and peripheral vertices

Given a tree T and the set of leaves $L(T)$, the Gamma index (also known as the terminal Wiener index) $\Gamma(T)$ is the sum of distances between all pairs of leaves. We will investigate the average distance between leaves in a tree T , called *the normalized Gamma index* and denoted by $\hat{\Gamma}(T)$. Some extremal trees under various constraints that maximize or minimize $\hat{\Gamma}(T)$ are identified or partially characterized. Many questions remain.

The average distance between peripheral vertices will also be discussed. This is joint work with Heather Smith.