Trees with minimum weighted Szeged index are of a large diameter

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The weighted Szeged index (wSz) has gained considerable attention recently because of its unusual mathematical properties. Searching for a tree (or trees) that minimizes the wSz is still going on. Several structural details of a minimal tree were described. We present a surprising property that these trees have maximum degree at most 16, and as a consequence, we conclude that these trees are of large diameter.