

The longest-edge (LE) trisection of a triangle t is obtained by joining the two equally spaced points of the longest-edge of t with the opposite vertex. In this paper we prove that for any given triangle t with smallest interior angle $\tau > 0$, if the minimum interior angle of the three triangles obtained by the LE-trisection of t into three new triangles is denoted by τ_1 , then $\tau_1 \geq \tau/c_1$, where $c_1 = \frac{\pi/3}{\arctan(\sqrt{3}/5)} \approx 3.1403$. Moreover, we show empirical evidence on the non-degeneracy property of the triangular meshes obtained by iterative application of the LE-trisection of triangles. If τ_n denotes the minimum angle of the triangles obtained after n iterative applications of the LE-trisection, then $\tau_n > \tau/c$ where c is a positive constant independent of n . An experimental estimate of $c \approx 6.7052025350$ is provided.