Sergey Korotov, Aleš Kropáč, Michal Křížek: *Strong regularity of a family of face-to-face partitions generated by the longest-edge bisection algorithm*; Helsinki University of Technology, Institute of Mathematics, Research Reports A521 (2007).

Abstract: *We examine the longest-edge bisection algorithm which chooses for bisection the longest edge in a given face-to-face simplicial partition of a bounded polytopic domain in R^d. Dividing this edge at its midpoint we define a locally refined partition of all simplices that surround this edge. Repeating this process, we obtain a family $\mathcal{F} = \{\mathcal{T}_h\}_{h\to 0}$ of nested face-to-face partitions $\mathcal{T}_h$. For $d = 2$ we prove that this family is strongly regular, i.e., there exists a constant $C > 0$ such that $\mathrm{meas}\, T \geq Ch^2$ for all triangles $T \in \mathcal{T}_h$ and all triangulations $\mathcal{T}_h \in \mathcal{F}$. In particular, the well-known minimum angle condition is valid.*

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