LOWER BOUNDS FOR THE CONSTANT IN THE CLOSURE ESTIMATE FOR ADAPTIVE MESH REFINEMENT.

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ABSTRACT

A triangulation of a polytope into simplices is refined recursively by standard bisection. In every refinement round, some simplices which have been marked by an external algorithm are bisected and some others around also must be bisected to retain regularity of the triangulation. Assuming a certain initial condition, Binev, Dahmen, DeVore (2D) [1] and Stevenson (nD) [2] bounded the additional number of simplices at the end of the iterated refinement process by a multiple of the total number of marked simplices. Subject of the talk will be an arbitrary-dimensional example which putatively maximizes the quotient of the additional number of simplices and the number of marked simplices.

References

[1] P. Binev, W. Dahmen, R. DeVore. *Adaptive finite element methods with convergence rates.*, Num. Math. 97(2) (2004), 219–268.

[2] R. Stevenson. *The completition of locally refined simplicial partitions created by bisection* Math. of Comp. 77(2008), 227–241.

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