



TopMath Vortrag

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Completion of locally refined simplicial partitions created by bisection

ABSTRACT

The main loop of an adaptive finite element method (AFEM) reads as
GALSOLVE \rightarrow ESTIMATE \rightarrow MARK \rightarrow REFINE.

In the routine REFINE, besides those that were marked for refinement, also additional elements are refined in order to retain conformity of the mesh. In [Numer. Math., 97(2004)] by Binev, Dahmen and DeVore, for the newest vertex bisection rule in two space dimensions, it was shown that the total number of these additional refinements can be bounded on some absolute multiple of the total number of marked elements. This result was one of the keys to prove quasi-optimality of AFEM. In this talk, we show that this result, and with that the quasi-optimality of AFEM, can be generalized to bisection rules in arbitrary space dimension.

Hierzu ergeht herzliche Einladung
Prof. Dr. Kunibert G. Siebert