

An Analysis of the Saturation Assumption with Application to Adaptive Finite Elements

Randolph E. Bank¹, Jinchao Xu², Harry Yserentant³

Abstract

The saturation assumption plays a central role in much of the analysis of a posteriori error estimates and refinement algorithms for adaptive finite element methods. In this work we provide an analysis of this assumption in the simple setting of interpolation. We then construct a useful computational framework to evaluate the efficiency and reliability of adaptive feedback loops.

¹University of California at San Diego

²Pennsylvania State University

³Technische Universität Berlin