ADAPTIVE TREE APPROXIMATION WITH NONCONFORMING FINITE ELEMENTS

Andreas Veeser

Università degli Studi di Milano, Dipartimento di Matematica, Via Saldini 50, 20133 Milano, andreas.veeser@unimi.it, users.mat.unimi.it/users/veeser/

Key words: Nonconforming finite element methods, Adaptive tree approximation, Optimality, Computational mechanics.

The adaptive tree approximation algorithm of P. Binev and R. DeVore [1] constructs near best adaptive meshes with linear complexity. To this end, it exploits error functionals that are local and subadditive.

Following [2], we define such error functionals for nonconforming finite elements in the case of a known target function and discuss its consequences for the approximation properties of adaptive nonconforming finite element methods, focusing on applications in computational mechanics.

REFERENCES

- [1] P. BINEV AND R. DEVORE, Fast computation in adaptive tree approximation, Numer. Math., 97 (2004), pp. 193–217.
- [2] A. VEESER, Approximating gradients with continuous piecewise polynomial functions, tech. rep., submitted.