

OPTIMAL CONVERGENCE RATES FOR GOAL-ORIENTED ADAPTIVITY

MICHAEL FEISCHL, THOMAS FÜHRER, GREGOR GANTNER, ALEXANDER HABERL,
AND DIRK PRAETORIUS

ABSTRACT. The recent work [1] introduced an axiomatic approach for the proof of optimal convergence of adaptive FEM and adaptive BEM with respect to the energy norm. There, an overall set of four properties of the error estimator appears to be sufficient and partially even necessary. We extend this approach to goal-oriented adaptivity, where the analysis of optimal convergence has only been considered in [4] for adaptive FEM for the Poisson model problem. Throughout the talk, our focus will be on optimal adaptivity for point error in BEM computations [2]. We mention, however, that the proposed approach also applies to a much larger class of problems [3] and hence also generalizes [4] much beyond the Poisson model problem.

Keywords: goal-oriented, adaptive finite elements, adaptive boundary elements, convergence, optimality, adaptive algorithm

Mathematics Subject Classifications (2010): 65N50, 65N30, 65N38, 65N12

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UNIVERSITY OF NEW SOUTH WALES, SYDNEY
E-mail address: `m.feischl@unsw.edu.au`

PONTIFICAL CATHOLIC UNIVERSITY OF CHILE
E-mail address: `tofuehrer@mat.puc.cl`

VIENNA UNIVERSITY OF TECHNOLOGY
E-mail address: `gregor.gantner@tuwien.ac.at`

VIENNA UNIVERSITY OF TECHNOLOGY
E-mail address: `ahaberl@asc.tuwien.ac.at`

VIENNA UNIVERSITY OF TECHNOLOGY
E-mail address: `dirk.praetorius@tuwien.ac.at`