

An Anisotropic h-p Approach for Goal Oriented Adaptivity in Time and Space

Endtmayer Bernhard¹ Marius Paul Bruchhäuser² Nils Margenberg³

In this talk, we present an anisotropic goal-oriented error estimator based on the Dual Weighted Residual (DWR) method for a convection diffusion problem. We employ discontinuous elements in space and time. The directional error indicators quantify anisotropy of the solution with respect to a user defined goal functional, and produce hp-refinements that efficiently capture sharp layers. A numerical example demonstrate the superior performance of the proposed method compared to isotropic h and hp adaptive refinement.

¹Leibniz University Hannover
endtmayer@ifam.uni-hannover.de

²Helmut Schmidt University Hamburg
bruchhaeuser@hsu-hh.de

³Otto-von-Guericke-Universität Magdeburg
nils.margenberg@ovgu.de