ON THE DUAL WEIGHTED RESIDUAL METHOD FOR MULTIPLE GOAL FUNCTIONALS APPLIED TO NONLINEAR PROBLEMS

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ABSTRACT

In this presentation, we further develop multigoal-oriented a posteriori error estimation. We formulate goal-oriented mesh adaptivity for multiple functionals of interest for nonlinear problems in which both the Partial Differential Equation (PDE) and the goal functionals may be nonlinear. Our method is based on a posteriori error estimates in which the adjoint problem is used and a partition-of-unity is employed for the error localization that allows us to formulate the error estimator in the weak form. We provide a careful derivation of the primal and adjoint parts of the error estimator and investigate the influence of the additional remainderpart. Finally we present some numerical results.

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