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Error Estimation for Isogeometric Analysis of the Stokes and Navier-Stokes equations

Abdullah Abdulhaque [1], Trond Kvamsdal [1], Mukesh Kumar [2] and Arne Morten Kvarving [3]

[1] Department of Mathematical Sciences
Norwegian University of Science and Technology, Trondheim, Norway
e-mail: abdullah.abdulhaque@ntnu.no, trond.kvamsdal@ntnu.no

[2] Department of Mathematics
College of Charleston, South Carolina, USA
e-mail: kumarm@cofc.edu

[3] Department of Applied Mathematics and Cybernetics
SINTEF ICT, Norway
e-mail: arne.morten.kvarving@sintef.no

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In this article, we will develop and present suitable error estimators for adaptive mixed isogeometric methods for solving the Stokes and Navier-Stokes equations. We will compare the use of residual-based error estimators with superconvergent patch recovery methods [1]. The adaptive refinement will be based on the use of LR B-splines [2], and the recently proposed methods using isogeometric Taylor-Hood, Sub-grid Taylor-Hood [3], and div-conforming elements [4]. The different estimators will be thoroughly tested on problems with (manufactured) analytical solutions.

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