Finite Elements for Scalar Convection-Dominated Equations and Incompressible Flow Problems – a Never Ending Story

Volker John[1]   Petr Knobloch[2]   Julia Novo[3]

The contents of this paper is twofold. First, important recent results concerning finite element methods for convection-dominated problems and incompressible flow problems are described that illustrate the activities in these topics. Second, a number of, in our opinion, important problems in these fields are discussed.

[1] Weierstrass Institute for Applied Analysis and Stochastics, Research Group Numerical Mathematics and Scientific Computing, Berlin, Germany,
`john@wias-berlin.de`

[2] Department of Numerical Mathematics, Faculty of Mathematics and, Physics, Charles University, Sokolovská 83, 18675 Praha 8, Czech Republic,
`knobloch@karlin.mff.cuni.cz`

[3] Departamento de Matemáticas, Universidad Autónoma de Madrid, Spain,
`julia.novo@uam.es`