Error estimates for the compressible Navier-Stokes equations

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Abstract

We present a general method based on the investigation of the relative energy of the system, that provides an unconditional error estimate for the approximate solution of the barotropic Navier–Stokes equations obtained by time and space discretization. We use this methodology to derive an error estimate for a specific DG/finite element scheme for which the convergence was proved in [1]. The talk contains material from two recent papers [2] and [3].

T.K. Karper. A convergent FEM-DG method for the compressible Navier-Stokes equations. Numer. Math. 125(3) :441–510, 2013.

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barotropic Navier-Stokes equations. IMA Journal of Numerical Analysis, to appear

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