Keskar, Jayant; Lyn, D. A.
Computations of a laminar backward-facing step flow at $Re = 800$ with a spectral domain decomposition method. (English) [Zbl 0948.76061]

From the summary: The two-dimensional laminar incompressible flow over a backward-facing step is computed using a spectral domain decomposition approach. A minimum number of subdomains (two) is used; high resolution being achieved by increasing the order of the basis Chebyshev polynomial. Results for the case of a Reynolds number of 800 are presented and compared in detail with benchmark computations.

MSC:

76M22 Spectral methods applied to problems in fluid mechanics
76D05 Navier-Stokes equations for incompressible viscous fluids
65M70 Spectral, collocation and related methods for initial value and initial-boundary value problems involving PDEs

Keywords:
pseudo stress-free condition; zero normal gradient condition; two-dimensional laminar incompressible flow; backward-facing step; spectral domain decomposition; Chebyshev polynomial

Full Text: DOI

References:


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