

**Hänel, D.; Dervieux, A.; Gloth, O.; Fournier, L.; Lanteri, S.; Vilsmeier, R.**

**Development of Navier-Stokes solvers on hybrid grids.** (English) [Zbl 1088.76035](#)

Hirschel, Ernst Heinrich (ed.), Numerical flow simulation III. CNRS-DFG collaborative research programme. Results 2000-2002. Berlin: Springer (ISBN 3-540-44130-1/hbk). Notes on Numerical Fluid Mechanics and Multidisciplinary Design (NNFM) 82, 30-46 (2003).

Summary: The paper presents common developments of solution methods for conservation laws on unstructured, hybrid grids. A time-accurate dual time stepping method for low Mach number flow is presented. A parallel linear multigrid method has been developed for applications to complex flows. Finally, a new approach for generating hybrid grids, based on level set methods, is described.

For the entire collection see [[Zbl 1053.76003](#)].

**MSC:**

**76M12** Finite volume methods applied to problems in fluid mechanics

**76N15** Gas dynamics (general theory)

**65Y05** Parallel numerical computation

**Keywords:**

conservation laws; parallel linear multigrid method; level set methods