1056-65-165   **David Alexander Hannasch*** (`DavidH@cs.unlv.edu`), 3569 East Reno Avenue, Las Vegas, NV 89120, and **Monika Neda** (`Monika.Neda@unlv.edu`). *Efficient simulation of fluid flow.* Preliminary report.

We are computationally investigating fluid flow models, for physically correct predictions of flow structures. The Navier-Stokes equations, the fundamental equations of fluid flow, are numerically solved via the continuous finite element method alongside models based on the idea of filtering the small scales/structures. Crank-Nicolson and fractional-step schemes are used for the discretization in time, while the Taylor-Hood and Mini elements are used for the discretization in space. The effectiveness of models and of discretizations in time and space are examined by studying the accuracy of flow characteristics, such as drag, lift and pressure drop about a body immersed in a fluid. (Received August 10, 2009)