Use of Manufactured Solution Method to Verification of a Unsteady CFD Codes of High Order of Accuracy

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ABSTRACT

A verification test of a direct numerical simulation code of high order accuracy using the Method of Manufacturing Solution is presented. The verification procedure is performed by introducing a forcing term in the equations of Navier/Stokes creating a no-realistic problem that it has an exact solution. The Verification of possible programming errors and the discussion of the numerical accuracy of the calculations using a systematic mesh refinement test was applied. An unsteady manufactured solution that imitates the infinitesimal disturbances propagation in Poiseuille flow was chose. The results showed that this technique is an useful too for debugging numerical codes.

References


