ANNOUNCEMENT—OPEN BOUNDARY CONDITION (OBC) MINISYMPOSIUM

In conjunction with the Seventh International Conference on Numerical Methods in Laminar and Turbulent flow that will be held at Stanford University (Palo Alto, California) on 15–19 July 1991, we are pleased to announce a one-day pre-conference minisymposium on OBCs for viscous incompressible (laminar) flow on 14 July. The purpose of the meeting is to compare numerical methods used at open boundaries and to find those that 'work best'. The comparison/evaluations will be performed via four test problems, defined below, on two computational domains: one that is long enough so that most of the significant physics occurs therein and one that is intentionally too short (and obtained via simple truncation of the long one) so that any OBC is severely tested. The four problems are:

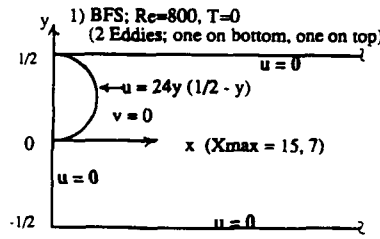
1. Backward Facing Step (BFS); steady isothermal flow.
2. Stratified BFS (SBFS); steady stably-stratified flow.
3. Vortex Shedding Past a Circular Cylinder (VS); unsteady isothermal flow.
4. Poiseuille–Benard Flow in a Channel (PB); unsteady forced plus natural convection.

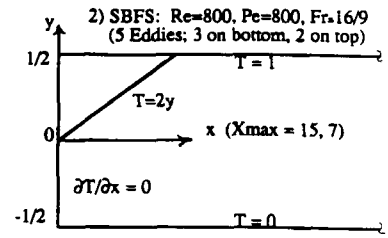
The governing equations, domains, and BCs (except OBC, of course) are given below, followed by the benchmark solutions.

The minisymposium is likely to happen in the following way: Some will solve one or more test problems and go to the meeting planning to present their results and display their OBCs. Some will solve one or more problems and go to the meeting just to listen and personally evaluate their own results. Some will solve no problem and go to the meeting to learn what others are doing. If you wish to be a member of the first class, which we obviously encourage, you must contact one of us, by 1 April 91, so that a reasonable format can be established. We will then also relate to you the minimum results to be included in your presentation. While the desirable end products are 'optimal' OBCs, it is possible that another product will be a paper (in this journal) that summarizes the contributions received.

For further information, contact any one of us:

1. Dr. Philip M. Gresho, L-262, Lawrence Livermore National Laboratory, P.O. Box 808, Livermore, CA 94550, U.S.A.
2. Prof. Robert L. Sani, Department of Chemical Engineering, Campus Box 424, University of Colorado, Boulder, CO 80309, U.S.A.
3. Prof. Cedric Taylor, Department of Civil Engineering, University of Wales, Swansea SA2 8PP, U.K.





Note: Vel. BC's same as BFS

$$\frac{\partial \mathbf{u}}{\partial t} + \mathbf{u}\cdot\nabla\mathbf{u} = -\nabla P + Re^{-1}\nabla^2\mathbf{u} + Fr^{-1}\mathbf{k}T$$

$$\nabla\cdot\mathbf{u} = 0$$

$$\frac{\partial T}{\partial t} + \mathbf{u}\cdot\nabla T = Pe^{-1}\nabla^2 T$$

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