



# PIMS / AMI Seminar



Friday, October 23, 2015  
3:00 p.m.  
CAB 657

## “Natural vorticity boundary conditions on solid walls and applications to velocity-vorticity methods”

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### Abstract

We derive boundary conditions for the vorticity equation with solid wall boundaries. The formulation uses a Dirichlet condition for the normal component of vorticity, and Neumann type conditions for the tangential components. In a Galerkin (integral) formulation the tangential condition is natural, i.e. it is enforced by a right-hand side functional and does not impose a boundary constraint on trial and test spaces. The functional involves the pressure variable, and we discuss velocity-vorticity formulations where the proposed condition is appropriate. Several numerical experiments are given that illustrate the validity of the approach. Additionally, we will discuss the long-time stability of the studied velocity-vorticity methods.

Refreshments will be served in CAB 649 at 2:30 p.m.