

# THE APPROXIMATIONS OF THE EXACT BOUNDARY CONDITION AT AN ARTIFICIAL BOUNDARY FOR LINEARIZED INCOMPRESSIBLE VISCOUS FLOWS

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摘要

关键词

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# THE APPROXIMATIONS OF THE EXACT BOUNDARY CONDITION AT AN ARTIFICIAL BOUNDARY FOR LINEARIZED INCOMPRESSIBLE VISCOUS FLOWS

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**Abstract** We consider the linearized incompressible Navier-Stokes (Oseen) equations in a flat channel. A sequence of approximations to the exact boundary condition at an artificial boundary is derived. Then the original problem is reduced to a boundary value problem in a bounded domain, which is well-posed. A finite element approximation on the bounded domain is given, furthermore the error estimate of the finite element approximation is obtained. Numerical example shows that our artificial boundary conditions are very effective.

**Key words** [Oseen equations](#) [Artificial boundary](#) [Artificial boundary condition](#) [Finite element approximation](#) [Error estimate](#).

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