

SOLVING TWO-DIMENSIONAL NAVIER - STOKES EQUATION WITH BOUNDARY ELEMENT METHOD

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ABSTRACT

The boundary element method (BEM) has been recently recognized as one of the very useful tools in analyzing many of the mechanical problems. Not needing calculation field discretization and solving the problem using boundary information are the most important features and advantages of this method. Using this method for solving nonlinear problems and also linear problems dealing with integral expressions on the field resulted from the main expression has gained more importance with proposing the Dual Reciprocity Method (DRM). This paper discusses how this method is applied for solving incompressible Navier-Stokes equations, and the results show that this method has highly desired accuracy.

KEYWORDS: Boundary Element Method, Navier-Stokes, Dual Reciprocity Method, Fundamental Solution, Integral Equations