Meeting: 1002, Pittsburgh, Pennsylvania, SS 5A, Special Session on Multiscale Algorithms in Computational Fluid Dynamics

1002-76-150 **Leo G Rebholz*** (ler6@math.pitt.edu), 301 Thackeray Ave, Department of Mathematics, University of Pittsburgh, Pittsburgh, PA 15260. *Induced Pressure Regularization and Eddy Viscosity for Equilibrium Navier-Stokes Equations.* Preliminary report.

This report explores a numerical method for solving Navier-Stokes equations. This method is derived by imposing model reduction as a constraint using Lagrange multipliers, and recovers the sub-grid eddy viscosity and pressure regularization models. Analysis of the method shows cases of optimality and that pressure regularization is only needed on the finest pressure scales. (Received September 13, 2004)