1067-35-1458   **Faranak Pahlevani*** (`fxp10@psu.edu`), 1600 Woodland Rd, Abington, PA 19001. *A Sensitivity Analysis for Partial Differential Equations with Applications.*

A technique for parameter sensitivity analysis of systems governed by partial differential equations is introduced. The presentation is focused on the use of sensitivity analysis for a fluid model (known as Eddy Viscosity Model) with respect to the variation of the filter length scale. The application of the sensitivity computations in improving flow functionals and identifying the reliable values of the parameter of interest is illustrated by two experiments: flow around a cylinder and the driven cavity problem. The finite element method is used in analysis and simulation of the flow solution as well as the flow sensitivity. (Received September 21, 2010)