1108-65-390 **Alexander Labovsky*** (aelabovs@mtu.edu). *A Defect Correction Approach to Turbulence Modeling.*

A method for resolving turbulent flow problems is presented, aiming at competing with the existing mathematical tractable Approximate Deconvolution Models in terms of accuracy, and outperforming these models in terms of the computational time needed. Full numerical analysis is performed, and the method is shown to be stable, easy to implement and parallelize, and computationally fast. The proposed method employs the defect correction approach to solve spatially filtered Navier-Stokes equations. A simple numerical test is provided, that compares the method against the Approximate Deconvolution turbulence model (ADM). When resolving a fluid flow at high Reynolds number, the numerical example verifies the key feature of the method: while having the accuracy comparable to that of the ADM, the method computes in less than 80% of the time needed for the turbulence model - even before the parallelization. (Received January 19, 2015)