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Vincent J Ervin* (vjervin@clemson.edu), Dept. Math. Sci., Clemson University, Clemson, SC 29634-0975, and **Lea Jenkins, William J Layton** and **Monika Neda**. *Filter based stabilization for evolution equations.*

We consider a filter based stabilization for evolution equations (in general) and for the Navier-Stokes equations (in particular). Typically filter based stabilization, although algorithmically appealing, introduce too much numerical dissipation to achieve a quality approximate solution. We consider a modification: *Evolve one time step, Filter, Deconvolve then Relax* to get the approximation at the new time step. We give a precise analysis of the numerical diffusion and error in this process. Several numerical experiments are given to illustrate the method. (Received January 23, 2010)