1067-35-756   **George Avalos*** (`gavalos@math.unl.edu`), Department of Mathematics, University of Nebraska-Lincoln, Lincoln, NE 68588. *Concerning the uniform stabilization of fluid-structure interaction PDE models.*

In this talk we shall derive certain delicate decay rates for a partial differential equation (PDE) system which comprises (parabolic) Stokes fluid flow and a (hyperbolic) elastic structural equation. The appearance of such coupled PDE models in the literature is well-established, inasmuch as they mathematically govern many physical phenomena; e.g., the immersion of an elastic structure within a fluid. The coupling between the distinct hyperbolic and parabolic dynamics occurs at the boundary interface between the media. In previous work, we have established semigroup wellposedness for such dynamics, in part through a nonstandard elimination of the associated pressure variable. For this PDE model, we provide a uniform rational decay estimate for solutions corresponding to smooth initial data; viz., for initial data in the domain of the semigroup generator. (Received September 14, 2010)