1145-35-1490 **George Avalos*** (gavalos@math.unl.edu), Department of Mathematics, University of Nebraska-Lincoln, Avery Hall 323, Lincoln, NE 68588. *Rational Decay rates for a PDE Fluid-Structure Interaction.*

In this talk, we will consider a fluid-structure PDE model of longstanding interest within the mathematical and biological sciences. Here, a three dimensional Stokes system and three dimensional vector-valued wave equation comprise the coupled PDE system under study; these respective PDE components come into contact via a boundary interface. For this fluid structure system, our main result is as follows: Under an appropriate geometric assumption which precludes imaginary point spectrum for the associated semigroup generator, then for smooth initial data - i.e., data in the domain of the generator – the corresponding solutions decay at a certain polynomial rate. (Received September 22, 2018)