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**Daniel Coutand\*** (coutand@math.ucdavis.edu) and **Steve Shkoller**. *Analysis of fluid-solid moving interface problems.*

The focus of my talk shall be on the well-posedness for the interface problem between a viscous fluid and an elastic solid. This is a two-phases problem, one parabolic and the other one hyperbolic, where each phase satisfies its own natural equation of evolution, and where the interaction between the two phases comes from the natural continuity of velocity field and normal stress across the unknown moving interface.

The methods known in fluid moving boundary problems (viscous or inviscid) cannot handle the apparent incompatibility between the regularity of the two phases, which has lead to a previous state of the art in the literature considering simplified or regularized solid phases. I shall present the new methods that were required in order to allow the treatment of classical elasticity laws in this moving interface problem. (Received March 07, 2006)