

1124-35-389

Lorena Bociu*, 2311 Stinson Drive, Raleigh, NC 27695. *Optimization and Control in Free Boundary Fluid-Structure Interactions.*

We consider optimization and optimal control problems subject to free and moving boundary fluid-structure interactions. As the coupled fluid-structure state is the solution of a system of PDEs that are coupled through continuity relations defined on the free/moving interface, the investigation (existence of optimal controls, sensitivity equations, optimality conditions, etc.) is heavily dependent on the geometry of the problem, and falls into moving shape analysis framework. (Received September 13, 2016)