1124-35-249 **Irena Lasiecka*** (lasiecka@memphis.edu), Dunn Hall, Department of Mathematical Sciences, Memphis, TN 38152-3370, and **Mihaela Ignatova**, **Igor Kukavica** and **Amjad Tuffaha**. *Global existence and partial stability of a 3 D fluid structure interaction with moving frame.*

We address the system of partial differential equations modeling motion of an elastic body inside an incompressible fluid. The fluid is modeled by the incompressible Navier-Stokes equations while the structure is represented by the wave equation with a feedback control interior damping. The additional boundary stabilization of the pressure , considered in our previous paper cited below , is no longer necessary. We prove the global existence of solutions for small initial data in a suitable Sobolev space. Decay rates of solutions with respect to lower topology are also established. Construction of the solutions is based on maximal regularity of Stokes dynamics along with sharp trace regularity obtained for Dirichlet-Neumann map corresponding to the hyperbolic dynamics.

This work is joint with M. Ignatova (Stanford University), I. Kukavica (University of Southern California) and A. Tuffaha (The Petroleum Institute, Abu Dhabi).

REF: On wellposedness and small data global existence for an interface damped free boundary fluid-structure interaction model (M. Ignatova, I. Kukavica. I. Lasiecka and A. Tuffaha) - Nonlinearity ,vol 27, issue 3, 467-499,2014 (Received September 11, 2016)