1067-35-962   **Peter Constantin*** (`const@math.uchicago.edu`), Department of Mathematics, The University
of Chicago, 5734 S. University Ave., Chicago, IL 60637, and **Weiran Sun**. *Existence, uniqueness
and stability for some models of complex fluids.*

I will discuss global existence, uniqueness and stability for Oldroyd-B systems and related models. The models resemble non-local damped and driven 3D Euler equations with variable density. I will show uniqueness and stability in relatively low regularity, natural spaces. Both existence and uniqueness are proved using a mixture of Lagrangian and Eulerian methods. I will explain why purely Eulerian methods are not easy to use for uniqueness in these relatively low regularity spaces. (Received September 16, 2010)