Special Issue

Instabilities in Viscoelastic Fluid Flows

Message from the Guest Editor

Flows of complex fluids occur in a variety of industrial applications, as well as in nature. From blood to plastic melts, the presence of microstructures such as polymers, proteins, and particles can promote nonlinear material properties, giving rise to intriguing flow behavior and transport dynamics. Among different rheological behaviors, viscoelasticity in particular may promote instabilities in nearly inertialess flows. Such instabilities can be driven solely by the non-Newtonian behavior of complex fluids such as polymer melts and solutions. This Special Issue of *Fluids* aims to collect recent theoretical, numerical, and experimental developments in this research field. Specific topics may include thermo-hydrodynamical instabilities, instabilities in shear or extensional flows, interfacial instabilities, instabilities in porous media, instabilities in Taylor–Couette flows, and transition to elastic turbulence.

Guest Editor

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