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Jia Zhao* (zhaojia@email.unc.edu), 3250 Phillips Hall, PH324J, Chapel Hill, NC 27599, and
Qi Wang (qwang@math.sc.edu). *On Energy-stable Schemes for Complex-fluid Models.*

Complex fluids are fluids whose micro-structure have impact on the fluid macroscopic properties, which include complex fluid mixtures of different types. In this talk, I will first present a systematic development of a general hydrodynamic model for complex fluid system using the generalized Onsager relation. Then, a semi-discrete scheme to solve this general model, which satisfies the discrete energy dissipation law, will be presented. Specific tricks on linearizing and decoupling the schemes will be presented for particular reduced models. In the end, several 3D simulations will be shown to illustrate the effectiveness of our schemes. (Received August 06, 2016)