



JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Friday, October 4, 2019
3:00 PM, 132 Gilman Hall

***"Fluid Flow Far From Equilibrium:
From Shear Thinning to the Glass Transition"***

Presented by Prof. Mark Robbins
Johns Hopkins University
Department of Physics & Astronomy
Hosted by Charles Meneveau (MechE)



The talk will describe nonlinear rheology in extreme conditions that change fluid structure and flow mechanisms. Elongational flow of entangled polymers produces near complete molecular alignment but only changes the viscosity by an order of magnitude and does not destroy the confining tube. A transition in the mechanism of shear thinning in lubricants from alignment to thermal activation is shown to be generic and

allows simulations to examine whether the viscosity diverges at a finite glass transition temperature.