FLOW OF FLUIDS WITH COMPLEX RHEOLOGY

جریان سیالات با رئولوژی پیچیده

Speaker

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Abstract

Thedissipative nonlinear system, such as those encountered in the fluid dynamics, can be reach an unstable state when the parameters that measuring the nonlinearity come important. For instance, parallel shear flows of Newtonian fluids are turbulent when the ratio of the nonlinear inertial term to the viscous dissipative term, i.e. Reynolds number, is sufficiently important. Adding a small amount of polymer to a Newtonian solvent introduces the non-linear effects and promotes the appearance of instabilities even at low Reynolds number. The purpose of this talk is to show the rheological influence of of complex fluids on the new dynamics and instabilities in different systems such as:

- Interfacial two phase flow
- Taylor-vortex flow in shear-thinning fluids
- Streaming viscoelastic flow
- Pipe flow of yield stress fluids
- Granular flow induced by natural convection

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Condensed Matter and Statistical Physics Group Weekly Seminar

Date

Wednesday
September 4, 2019

Time

14:00-15:00

Location

Seminar Room, (classroom A)
Farmanieh Building, IPM