

The College of Arts & Sciences
Department of Mathematical Sciences

Colloquium

Professor Michael Renardy

Virginia Tech

Friday, November 9th
Room 250, 60 West Charlton
4:00 – 5:00 pm

On controllability of linear viscoelastic flows

Controllability is the ability to steer a system from a given initial state to a desired final state. In this talk, we consider linear viscoelastic flow in a bounded domain. The control is a body force acting in a subdomain. We consider Maxwell or Jeffreys models with several, possibly infinitely many, relaxation modes. Results on approximate null controllability of the stresses as well as the motion are established. We also show that exact null controllability is not possible.

Nonlinear viscoelastic flows are not controllable. It then becomes a challenging and mostly unsolved problem how to characterize the states to which a flow can be controlled.

Refreshments will be served 3:15 – 3:45 pm in the Faculty & Graduate
Student Lounge Room 4118 French Hall West