

Modeling and computing thin films on thermally conductive substrates

Prof. Lou Kondic

New Jersey Institute of Technology
Department of Mathematical Sciences
Newark, New Jersey, USA



The talk will focus on modeling evolution of thin fluid films exposed to external heat source on a thermally conductive substrate. The particular case that will be used as a motivation involves evolving metal films of nanoscale thickness exposed to external laser heating; however the mathematical models and supporting computations are more general and could apply to a variety of materials and heating mechanisms. One challenge in considering films on thermally conductive substrates involves coming up with accurate models for evolution of thermal energy that could be efficiently coupled with the fluid mechanical evolution of the film itself. The talk will also touch on some new and not completely understood results including the influence of thermal dependence of material parameters on the film evolution as well as the possibility of oscillatory film instabilities, among others.

Wednesday, October 9th, 2019 at 2:15 pm

**MPIDS, Prandtl lecture hall,
Am Faßberg 17, Göttingen**

**Max Planck Institute for Dynamics and Self-Organization
Dynamics of Complex Fluids - Interfaces of complex fluids group
Dr. Stefan Karpitschka**

Email: stefan.karpitschka@ds.mpg.de, Phone: +49-(0)551/5176-262
Am Faßberg 17, 37077 Göttingen, Germany