TEMPLE UNIVERSITY
Department of Mathematics

Applied Mathematics and Scientific Computing Seminar

Room 617 Wachman Hall

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The Dynamic Fluid Film Equations: A New Frontier for Computational Scientists

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Abstract.

The recently formulated exact equations for the dynamics of fluid films are a rare opportunity, as well as a formidable challenge, for the computational scientist. These fundamental equations are deeply nonlinear in part because they wage their dynamic battle on a deforming domain. No analytical solutions exist today; meanwhile, physical observations provide the best benchmark for numerical explorations. Thus, these equations have thrown down the gauntlet to the numerical analyst — who will accept the challenge?