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Thomas Hagen* (thagen@memphis.edu), 367 Dunn Hall, Department of Mathematical Sciences, The University of Memphis, Memphis, TN 38152. *Analytical problems in the theory of thin free films.*

The theory of thin free films provides robust models for viscous fluid sheets and films forming in the ambient air. Models are given under various simplifying assumptions in the form of nonlinear transport equations coupled with elliptic momentum balances in low dimensions.

This presentation will focus on central analytical problems pertaining to the solvability of the governing equations and regularity of the linearized semigroup. To this end, we will make use of methods from complex analysis, spectral and operator theory as well as pde specific techniques. Part of this work was done jointly with S. Ceci. (Received February 02, 2015)