Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

Circular Sheet Retraction NIKOS SAVVA, JOHN W.M. BUSH, Department of Mathematics, MIT — We present the results of a theoretical investigation of the dynamics of an axisymmetric sheet moving under the combined influence of curvature, viscous and inertial forces. The leading order equations are derived by exploiting the slenderness of the sheet. Particular attention is given to elucidating the importance of variations in sheet thickness, and to deriving the appropriate Trouton viscosity. Using this simplified model, we study the retraction of a circular, viscous film, extending the prior work by Brenner and Gueyffier.[1] We examine the dependence of the flow structure on the governing parameters, and we compare our numerical results with the experimental observations of Debregeas.[2]

[1]Brenner & Gueyffier, *Phys. Fluids* **11**, 737-739, 1999.
[2]Debregeas, *Phys. Rev. Lett.* **75**, 3886-3889, 1995.

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Date submitted: 06 Aug 2006 Electronic form version 1.4