

Abstract Submitted
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Examining the origin of spatial shear-rate variation in Couette flow of entangled polymer solutions THOMAS Y. HU, Unilever Research, CT, AMY PHILIPS, SHI-QING WANG, Department of Polymer Science, University of Akron — The objective of this work is to determine the time-dependent velocity profile in Couette flow of entangled polymer solutions. In comparison to other flow apparatuses including cone-plate and sliding plate assemblies, the Couette flow can potentially avoid the complications arising from the boundary conditions. Both rheological and particle imaging velocimetric measurements have been carried out on model solutions to compare with results obtained for a cone-plate cell [1] and to shed light on the nature of non-homogeneous shear flow in the stress plateau region.

[1] Tapadia, P.; Wang, S. Q. *Phys. Rev. Lett.* , in press (2005).

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