

Abstract Submitted  
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**Reduced Interfacial Entanglement Density Affects Boundary Condition of Polymer Flow**<sup>1</sup> KARIN JACOBS, Saarland University, Experimental Physics — Hydrodynamic boundary conditions play a crucial role in the flow dynamics of thin films and can be probed by the analysis of liquid front profiles. For long-chained polymer films it was reported that a deviation from a symmetric profile is a result of viscoelastic effects. Our experiments show, however, that merely a slip boundary condition at the solid/liquid interface can lead to an asymmetric profile. Variation of molecular weight shows that slippage is directly linked to chain entanglements. We find a reduced entanglement density at the solid/liquid interface (factor 3 to 4), which stresses the importance of considering non-bulk polymer properties in the vicinity of an interface. [O. Baumchen, R. Fetzer and K. Jacobs, Phys. Rev. Lett. (in press).]

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