

Abstract Submitted  
for the MAR14 Meeting of  
The American Physical Society

**Locality of entangled polymer dynamics** CHI HANG BOYCE  
TSANG, LINGXIANG JIANG, STEVE GRANICK, Univ of Illinois - Urbana —  
A combination of sparse and full fluorescence labeling of entangled actin solutions (filaments about 15  $\mu\text{m}$  long at 1 mg/ml concentration) allowed us to probe both filament-scale polymer dynamics and effectively monomer dynamics. On the filament scale, the reptation tube idea of classical polymer physics works well. However, on a local scale comparable to mesh size, local tube width fluctuation becomes important. For the first time, the dependence of longitudinal diffusion on local tube width was quantified.

Chi Hang Boyce Tsang  
Univ of Illinois - Urbana

Date submitted: 05 Nov 2013

Electronic form version 1.4