

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Tether extrusion from biomimetic cells KARINE GUEVORKIAN, LÉA LAETITIA PONTANI, CÉCILE SYKES, FRANÇOISE BROCHARD-WYART, Institut Curie — The plasma membrane of a cell is coupled to its underlying cytoskeleton through membrane binding proteins. By pulling membrane tethers, one can measure the strength of these attachments and also probe the rheology of the membrane. In the past, we have used the hydrodynamic tether extrusion technique to study tether dynamics of Red Blood Cells [1]. To describe the non-linear force-velocity behavior at high extrusion forces, we have developed a theoretical model based on lipid permeation through the network of membrane binding proteins [2]. To test this model, we use a biomimetic system consisting of liposomes encapsulating an actin cortex in which the density of membrane-cytoskeleton linkers can be controlled. Here we will present our recent experimental results and compare them to the theoretical predictions. [1] N. Borghi et al, *Biophys. J.* 93 (2007) [2] F. Brochard-Wyart, et al, *Proc. Natl. Acad. Sci. USA*, 103 (2006)

Karine Guevorkian
Institut Curie

Date submitted: 30 Nov 2008

Electronic form version 1.4