Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Measuring the Height of Adsorbed Water Films With Atomic Force Microscopy Via Static Force Curves[1] JASON GIAMBERARDINO, University of South Carolina — Water Plays a crucial role in all biological processes and is present in almost all measurement scenarios. At the nanoscale, its presence has a large effect on measurement outcomes. Here, we present a measurement of the heights of adsorbed water films on a variety of commonly used substrate surfaces. The adsorbed films create an additional force, the capillary force, which must be added to the Van der Waals and repulsive forces to fully characterize the tip-sample interaction. Static force curves indicate the presence of this tertiary force, which depends on the height of the film, above a certain relative humidity. A fit of these curves then yields the height of the film present.

[1]Army Research Office # W911NF-11-1-0251

Jason Giamberardino
University of South Carolina

Date submitted: 13 Nov 2013 Electronic form version 1.4