

MAR16-2015-020153

Abstract for an Invited Paper
for the MAR16 Meeting of
the American Physical Society

Coherent X-ray Scattering from Liquid-Air Interfaces¹

OLEG SHPYRKO, University of California, San Diego

Advances in synchrotron x-ray scattering techniques allow studies of structure and dynamics of liquid surfaces with unprecedented resolution. I will review x-ray scattering measurements of thermally excited capillary fluctuations in liquids, thin polymer liquid films and polymer surfaces in confined geometry. X-ray Diffuse scattering profile due to Debye-Waller like roughening of the surface allows to probe the distribution of capillary fluctuations over a wide range of length scales, while using X-ray Photon Correlation Spectroscopy (XPCS) one is able to directly couple to nanoscale dynamics of these surface fluctuations, over a wide range of temporal and spacial scales. I will also discuss recent XPCS measurements of lateral diffusion dynamics in Langmuir monolayers assembled at the liquid-air interface.

¹This research was supported by NSF CAREER grant 0956131