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Fluctuation dynamics of water-hydrophobic interface SUNG CHUL BAE, ADELE POYNOR, STEVE GRANICK, University of Illinois — Previous x-ray reflectivity measurements of the interface between water and hydrophobic surfaces with contact angle $>100^\circ$ indicate the existence of depletion layer. However, x-ray measurements provide little information of the fluctuation dynamics. In this presentation, surface plasmon resonance imaging technique with < 1 ms temporal resolution and $< 1\mu\text{m}$ lateral resolution has been built to investigate interface between water and methyl-terminated gold surface. This technique enables to examine the fluctuation dynamics of the depletion layer with temporal and spatial correlation analysis. The characteristic time and length scales of this fluctuation are explored.

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