Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Structure and Dynamics of the Au(111) Surface in an Electrochemical Enviroment[1] JOHN COLLINI, Rochester Institute of Technology, YIHUA LIU, Argonne National Laboratory , BRYANNE MCDONOUGH, MICHAEL PIERCE, Rochester Institute of Technology, HOYDOO YOU, Argonne National Laboratory, VLADIMIR KOMANICKY, Safarik University, ANDI BARBOUR, Brookhaven National Laboratory — The Au(111) surface possesses a well-known herringbone surface reconstruction pattern. However, the character of the reconstruction's response to external variables is not completely understood due to the limited amount of kinetics and dynamics studies of the surface in different environments. Here, we present *in-situ* x-ray scattering measurements from the Advanced Photon Source at Argonne National Laboratory of the Au(111) surface in a controllable electrochemical environment of weak NaF solution. Crystal truncation rod (CTR) measurements were taken to examine how the average surface properties and overall structure change with cell voltage. X-ray photon correlation spectroscopy (XPCS) measurements were also taken to examine how the dynamics of the surface change with voltage. The relation between applied potential, average kinetics, and microstate dynamics will be discussed.

[1]Funding provided by Research Corporation for Science Advancement. Work done at the Advanced Photon Source supported by the U.S. Department of Energy.

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Date submitted: 06 Nov 2015 Electronic form version 1.4