## Abstract Submitted for the MAR14 Meeting of The American Physical Society

Angle-Resolved Synchrotron Photoemission Spectroscopy and Density Functional Theory Studies on Iridium Modified Si(111) Surface NURI ONCEL, University of North Dakota, Department of Physics and Astrophysics, DENIZ CAKIR, University of Antwerp, Department of Physics, J. HUGO DIL, BARTOSZ SLOMSKI, GABRIEL LANDOLT, Physik-Institut, Universität Zürich — The physical and electronic properties of Ir modified Si(111) surface has been investigated with the help of Angle Resolved Photoemission Spectroscopy (ARPES) and Density Functional Theory (DFT). The surface consists of Ir-ring clusters that form  $\sqrt{7} \times \sqrt{7} R 19.1^0 - Ir$  reconstruction. The band structure around the Fermi level is dominated by the projected bulk states and the states originating from the '1x1' domains of the underlying Si substrate. The dispersion of these states is heavily modified due to umklapp scattering from the surface Brillouion zone. The morphology of the surface and the origins of the observed electronic states are explored and confirmed by DFT calculations.

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