

Abstract Submitted
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Characterization of the Unoccupied Electronic Structure of Alkali Atoms on Noble Metal Surfaces by Time- and Angle-Resolved Two-Photon Photoemission VAHIT SAMETOGLU, University of Pittsburgh, AIMO WINKELMANN, Max-Planck-Institut, JIN ZHAO, HRVOJE PETEK, University of Pittsburgh, NIKO PONTIUS, BESSY mbH, ANDREI BORISOV, Université Paris-Sud, PEDRO ECHENIQUE, Universidad del Pas Vasco, UNIVERSITY OF PITTSBURGH TEAM, MAX-PLANCK-INSTITUTE COLLABORATION, BESSY MBH COLLABORATION, UNIVERSITÉ PARIS-SUD COLLABORATION, UNIVERSIDAD DEL PAÍS VASCO COLLABORATION — We perform angle-resolved two-photon photoemission (2PPE) spectral measurements on alkali atom (Li - Cs) covered noble metal (Cu(111) and Ag(111)) surfaces. The progressive evolution of 2PPE spectra with the alkali atom coverage is measured in the 0 - 0.1 monolayer range. We report on the dependence of 2PPE spectra on the alkali atom coverage, the photoemission angle, and the excitation laser polarization. The spectral measurements provide new information on the nature of chemisorption of alkali atoms on noble metals, as well as the photoinduced charge transfer excitation of alkali atoms. A general model for the image charge interactions at metal surfaces reproduces the experimental electronic structure quantitatively.

Vahit Sametoglu
University of Pittsburgh

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