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Charge transfer at adsorbate-covered metal surfaces BOGDANA BAHRIM, JAMIE STAFFORD, Department of Physics, Lamar University, BORIS MAKARENKO, Department of Chemistry, University of Houston — Much interest has revolved in recent years around the charge transfer at noble metals covered by adsorbates [1-3]. Why study adsorbate–covered surfaces? Surface adsorbates induce strong local perturbations in the electronic structure and potentials in their surroundings. Even at very low coverage, the charge transfer becomes a complex many-body problem, and is strongly affected by adsorbates. Why study noble metals in particular? Cu, Au, and Ag are interesting because the (111) face presents a band gap that extends below the vacuum level at the gamma point. Such a band gap forbids electrons with certain energies to be transferred into the metal along the surface normal. Therefore, on adsorbate-covered noble metal surfaces the charge transfer is dramatically affected, with consequences on various experimental results such as ion fractions obtained during scattering and sputtering experiments. Our studies investigate the electron dynamics at Na/Cu(111), and provide information about the local effects induced by adsorbates. [1] A.K. Kazansky, A.G. Borisov and J.P. Gauyacq, Surface Science 577, 47 (2005) [2] S. Yu, B. Bahrim, B. Makarenko and J.W. Rabalais, Surface Science 606, 1700 (2012) [3] S. Yu, B. Bahrim, B. Makarenko and J.W. Rabalais, Surface Science 636, 13 (2015)

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