

Abstract Submitted
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Time-resolved two-photon-two-path photoemission spectroscopy of Ag(111) and Au(111) surfaces¹ MARCELO AMBROSIO, UWE THUMM, Kansas State University — While time-resolved photoelectron spectra address transient collective and single-electron effects in solids with unprecedented resolution [1-4], their interpretation is challenging and requires numerical modeling. We quantum-mechanically modeled two-photon-two-path photoemission spectra from metal surfaces, including Fresnel transmission and reflection of the incident IR pulse at the surface in terms of generalized Volkov final states, which we find in numerical applications to Ag(111) and Au(111) surfaces to significantly influence the photoemission process [4]. To compare [5] with measured RABBITT (reconstruction of attosecond beating by interference of two-photon transitions) spectra [1], we phenomenologically added pulse-delay-independent contributions of secondary XUV and IR photoelectrons and adjusted surface-electronic-structure parameters to recently measured energy-resolved synchrotron-radiation photoemission spectra [6] [1] R. Locher *et al.*, *Optica* **2**, 405 (2015). [2] Z. Tao *et al.*, *Science* **353**, 62 (2016). [3] M. Lucchini *et al.*, *Phys. Rev. Lett.* **115**, 137401 (2015). [4] M. J. Ambrosio and U. Thumm, *Phys. Rev. A* **94**, 063424 (2016); *Phys. Rev. A* **96**, 051403 (2017). [5] M. J. Ambrosio and U. Thumm, in preparation. [6] F. Roth *et al.*, *J. Electron. Spectrosc. Relat. Phenom.*, in press (2017).

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