

Abstract Submitted  
for the DAMOP18 Meeting of  
The American Physical Society

**Time-resolved photoelectron spectroscopy of Ag(111) and Au(111) surfaces**<sup>1</sup> MARCELO AMBROSIO, UWE THUMM, Kansas State University — Upon illumination of transition metal surfaces with an XUV pulse train and a time-delayed phase-coherent IR pulse, recent experiments [1-3] have applied the RABBITT (reconstruction of attosecond beating by interference of two-photon transitions) technique to provide time-resolved information about the photoemission processes on surfaces. We simulated RABBITT spectra within a quantum-mechanical model, calculating the transition matrix element in the non-dipole velocity gauge between tight-binding initial and a modified-Volkov final states [4] and adjusting the substrate parameters to measured energy-resolved spectra for normal emission [5]. We compare our numerically modeled RABBITT spectra with experimental spectra obtained by Locher *et al.* [1] for Ag(111) and Au(111) surfaces, accounting for electrons scattered through the substrate during the emission process by including a delay-independent photoelectron background [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* **96**, 051403 (2017). [5] F. Roth *et al.* *J. Electron. Spectrosc. Relat. Phenom.*, in press (2017). [6] M. J. Ambrosio and U. Thumm, in preparation.

<sup>1</sup>Supported by the NSF and the Division of Chemical Sciences, Office of the Basic Energy Sciences, Office of Energy Research, US DoE.

Uwe Thumm  
Kansas State University

Date submitted: 06 Feb 2018

Electronic form version 1.4