

Abstract Submitted
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Film-thickness-dependent attosecond streaking time delays for photoemission from adsorbate-covered surfaces QING LIAO, UWE THUMM, Kansas State University — We analyze streaked photoelectron spectra and attosecond time delays for the streaked photoemission from the valence band (VB) and core levels (CLs) of Mg(0001) covered W(110) surfaces within a quantum-mechanical model [1,2]. The relative streaking time delay between Mg(VB) and Mg(2p) CL photoelectrons (PEs) is found to be sensitive to Mg coverage for film thicknesses below ~ 100 layers. The relative streaking time delay between Mg(2p) and W(4f) CL PEs is shown to strongly depend on the Mg film thickness and thus on transport effects of PEs inside this solid, in particular, on the scattering of released PEs off the substrate and thin film lattices. Supported by the Chemical Sciences, Geosciences, and Biosciences Division, Office of Basic Energy Sciences, Office of Science, U.S. Department of Energy under Grant No. DE-FG02-86ER13491 and NSF Grant PHY-1068752.

[1] C.-H. Zhang and U. Thumm, Phys. Rev. Lett. **102**, 123601 (2009).

[2] Q. Liao and U. Thumm, Phys. Rev. Lett. **112**, 023602 (2014).

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