Abstract Submitted
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A comparative study of attosecond photoelectron streaking spectroscopy of metallic nanospheres[1] JIANXIONG LI, ERFAN SAYDANZAD, UWE THUMM, Kansas State University — We present new numerical results for streaked photoemission from Au, Ag, and Cu nanospheres by an extreme ultraviolet (XUV) and an infrared (IR) or visible streaking pulse, based on a quantum-mechanical model [1]. We discuss significant plasmonic streaking oscillation-amplitude enhancements and phase shifts for all three metals, relative to the results excluding the induced plasmonic field near the nanoparticle surface. Based on our streaked spectra, we demonstrate the reconstruction of the plasmonic-field enhancement and phase shift for each material, suggesting the use of attosecond streaking spectroscopy to reveal the dielectric plasmonic response of nanoparticles in the IR and visible spectral range. [1] J. Li, E. Saydanzad, and Uwe Thumm, Phys. Rev. A 94, 051401(R) (2016).

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