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Attosecond plasmonic streaking from gold nanospheres[1] JIANXIONG LI, UWE THUMM, Physics Department, Kansas State University — To study time–resolved photoemission from gold nanospheres, we developed a semi–analytical quantum–mechanical approach. We use Mie theory to analytically calculate plasmonically enhanced fields near 10 to 200 nm gold nanospheres, driven by intense incident near–infrared (NIR) or visible light pulses. We model the gold conduction band in based on spherical square well potentials. Our first numerical results for streaked photoelectron spectra from gold nanospheres show a 3 times increased streaking spectrum amplitude for incident 800 nm streaking pulses and 10 nm diameter gold nanospheres, as compared with calculations in which the plasmonic near-field enhancement is switched off.

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