

Abstract Submitted  
for the DAMOP18 Meeting of  
The American Physical Society

**Spatiotemporal imaging of plasmonic fields near metallic nanoparticles beyond the diffraction limit**<sup>1</sup> ERFAN SAYDANZAD, JIANXIONG LI, UWE THUMM, Kansas State University — Optically induced collective conduction electron oscillations can generate intense plasmonic field near nanoparticles [1, 2]. Based on simulated streaked photoemission spectra, we suggest a method for reconstructing nanoplasmonic fields near metal nanospheres with nm spatial and sub-fs temporal resolution. We apply this imaging scheme to Au nanospheres and scrutinize the accuracy of the spatiotemporally reconstructed plasmonic near-field distributions in comparison with a directly calculated plasmonic field using Mie theory [3]. [1] E. Saydanzad, J. Li, and U. Thumm, Phys. Rev. A **95**, 053406 (2017) [2] J. Li, E. Saydanzad, and U. Thumm, Phys. Rev. A **94**, 051401(R) (2016); Phys. Rev. A **95**, 043423 (2017). [3] E. Saydanzad, J. Li, and U. Thumm, in preparation.

<sup>1</sup>Supported by the NSF and the US DoE.

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Date submitted: 06 Feb 2018

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