

Abstract Submitted
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Photodetachment **microscopy**
in time-dependent fields¹ HARINDRANATH AMBALAMPITIYA, ILYA FABRIKANT, University of Nebraska-Lincoln — Photodetachment microscopy studies spatial distribution of photodetached electrons in static electric fields. The theory of this phenomenon was recently extended [1] to time-dependent electric fields in the terahertz range. In the present paper we use the semiclassical propagator (time-dependent Green's function) for investigation of temporal and spatial interference of classical electron trajectories in ac fields within a broad frequency range from radio to terahertz frequencies. The chosen length scale corresponds to the geometry of a traditional photodetachment microscopy experiment [2]. The propagator approach allows us to treat singularities in temporal and spatial distributions due to bifurcations, when the trajectories emerge in pairs from the complex space-time domain.¹ B. C. Yang and F. Robicheaux, Phys. Rev. A **92**, 063410 (2015).² C. Blondel, C. Delsart, and F. Dulieu, Phys. Rev. Lett. **77**, 3755 (1996).

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