Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Single-shot ultrafast interferometric imaging[1] DAIWEI ZHU, DONGHOON KUK, KI-YONG KIM, Univ of Maryland-College Park — We have developed a new interferometric method capable of capturing 2-dimensional, time-varying phase and amplitude profiles in a single shot. Most single-shot interferometry provides one-dimensional spatial information as demonstrated in detecting laser-produced transients, phase transition, and plasma generation. By contrast, our new method can provide 2-dimensional spatial information at multiple time delays in a single shot. In this scheme, we analyze the limits of spatial and temporal resolution and have tested the working principle with a computer simulation. This new diagnostic holds a great potential in study ultrafast phenomena occurring on sub-picosecond time scales.

[1]Work supported by NSF under Award No. 1351455.

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Date submitted: 06 Nov 2015 Electronic form version 1.4