

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**Second Harmonic Generation in the Blowout Regime of Laser Wakefield Accelerators**<sup>1</sup> DANIEL GORDON, Naval Research Laboratory, BAHMAN HAFIZI, Icarus Research, Inc., ANTONIO TING, Naval Research Laboratory, DMITRI KAGANOVICH, Icarus Research, Inc., PHIL SPRANGLE, Naval Research Laboratory — Analysis and simulations of the blowout regime of laser wakefield accelerators reveal that the density gradients associated with electron cavitation can lead to strong conical emission of radiation at the second harmonic of the laser frequency. The frequency spectrum and angular distribution of this radiation carries information about the structure of the cavitation region. This information might be useful as a diagnostic of the “plasma bubble” which is observed in simulations of quasi-monoenergetic acceleration in laser wakefields.

<sup>1</sup>Work supported by Department of Energy and Office of Naval Research

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Date submitted: 20 Jul 2007

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