Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Particle Imaging, Characterization and Extinction Measurement with Digital Holography NAVA SUBEDI, MATTHEW BERG, Mississippi State University — This work extends the concept of application of digital holographic microscopy (DHM) from particle imaging to the measurement of photothermally induced particle expansion and energy flow that gives rises to extinction cross section. In this work, a particle is illuminated by a pulsed laser and the interference pattern produced by superposition of particle's forward-scattered wave with the incident wave is recorded by a digital camera. This recorded pattern constitutes a digital hologram which can be numerically processed to get image, photothermally induced expansion and extinction cross-section of the particle. These information of the particle are the basic requirements for the characterization of respirable-sized (1-10 μm) aerosols particles.

Nava Subedi
Mississippi State University

Date submitted: 02 Dec 2014 Electronic form version 1.4