Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Optical Trapping Forces from Electric Fields Inside Dielectric Materials[1] DOUGLAS BONESSI, KEITH BONIN, Wake Forest University, THAD WALKER, University of Wisconsin, Madison — We developed a method for computing forces from internal electric fields. The internal fields are found using discrete dipole approximation (DDA) and finite difference time domain (FDTD) approaches and the results are compared. We are interested in the results from an optical trapping viewpoint, though other simulations are used for benchmarks. This method can handle arbitrary input beams and particle sizes and shapes. We hope to report on similar calculations to calculate optical torques on birefringent particles in the Mie size regime.

[1]This research was supported by a grant from Research Corporation

Douglas Bonessi
Wake Forest University

Date submitted: 27 Nov 2007 Electronic form version 1.4