

1067-65-2210

Aubrey L Leung* (leungau@onid.orst.edu), 368 Kidder Hall, c/o Dr. V. A. Bokil, Department of Mathematics, Oregon State University, Corvallis, OR 97331, and **Vrushali A Bokil** (bokilv@math.oregonstate.edu), 368 Kidder Hall, Department of Mathematics, Oregon State University, Corvallis, OR 97331. *A Sequential Operator Splitting Method for Maxwell's Equations in Debye Dispersive Media*. Preliminary report.

We consider Maxwell's equations in dispersive media of Debye type. We present an operator splitting scheme in one dimension that decouples fast and slow moving processes in the problem to develop separate subproblems. We demonstrate that the scheme is unconditionally stable, first order accurate and perform a numerical stability and dispersion analysis. We provide comparisons of our operator splitting method with the Yee finite difference time domain method and demonstrate the advantages of operator splitting. (Received September 22, 2010)