Lior Horesh

Refinement criteria for OcTree discretization of Maxwell equations

Department of Mathematics and Computer Science
Emory University
400 Dowman Dr
Atlanta
GA
30322
horesh@mathcs.emory.edu
Eldad Haber

In this study an OcTree discretization for Maxwells equations is proposed. This discretization is based on an explicit construction of the adjoint of the curl operator. As opposed to the $\mathcal{O}(1)$ local accuracy offered by the transposed curl operator, this non-symmetric construction offers local accuracy of $\mathcal{O}(h)$, which is more favorable. We explore several adaptive refinement criteria, and discuss their effectiveness.