

Project:

(version of October 22, 2007)

## Robust Maxwell Formulations for all Frequencies

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Funding: no external funding

Duration: ongoing – started in November 2006

A novel unified method for the stable numerical solution of the time-harmonic Maxwell's equations for any frequency is developed. The method is based on an extended  $\mathbf{a}\text{-}\varphi$  variational formulation of the full linear Maxwell's equations. This formulation avoids stability problems in the stationary limit, where it reduces to the equations of electrostatics and magnetostatics. Both capacitive and inductive effects are taken into account in a robust fashion for all frequencies.

### **Own publications.**

R. HIPTMAIR, F. KRÄMER, AND J. OSTROWSKI, *Robust maxwell formulations*, IEEE Trans. Magnetics, (2007). To appear.