

Higher-order unconditionally stable algorithms to solve the time-dependent Maxwell equations.

Kole JS, Figge MT, De Raedt H (2002) Higher-order unconditionally stable algorithms to solve the time-dependent Maxwell equations. *Phys Rev E Stat Nonlin Soft Matter Phys* 65(6 Pt 2), 066705.

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Abstract

For the recently introduced algorithms to solve the time-dependent Maxwell equations [J. S. Kole, M. T. Figge, and H. De Raedt, *Phys. Rev. E* 64, 066705 (2001)], we construct a variable grid implementation and an improved spatial discretization implementation that preserve the exceptional property of the algorithms to be unconditionally stable by construction. We find that the performance and accuracy of the corresponding algorithms are significant and illustrate their practical relevance by simulating various physical model systems.

Beteiligte Forschungseinheiten

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