Depeyre, Sophie; **Issautier, Didier**

A new constrained formulation of the Maxwell system. (English) Zbl 0874.65097

RAIRO, Modélisation Math. Anal. Numér. 31, No. 3, 327-357 (1997).

The authors present a new constrained formulation of the Maxwell equations in order to improve the numerical verification of the divergence relations $\mathbf{B} = 0$, $\operatorname{div} \mathbf{E} = \frac{\varrho}{\epsilon_0}$. The stability of the finite volume schemes applied to the new constrained system using rectangular and triangular meshes is also studied. The authors present some numerical results in order to demonstrate the efficiency of this method.

Reviewer: K.Najzar (Praha)

MSC:

65Z05 Applications to the sciences
65N30 Finite element, Rayleigh-Ritz and Galerkin methods for boundary value problems involving PDEs
65N12 Stability and convergence of numerical methods for boundary value problems involving PDEs
35Q60 PDEs in connection with optics and electromagnetic theory
78A25 Electromagnetic theory, general

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Maxwell system; numerical examples; stability; finite volume schemes

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