# Abstracts

## Time-domain analysis of TM scattering from conducting cylinders using a hybrid method

*T. Roy, T.K. Sarkar, A.R. Djordjevic and M. Salazar-Palma. "Time-domain analysis of TM scattering from conducting cylinders using a hybrid method." 1998 Transactions on Microwave Theory and Techniques 46.10 (Oct. 1998, Part I [T-MTT]): 1471-1477.*

In this paper, the finite-element method (FEM) is used to solve open-region problems utilizing the time-domain differential form of Maxwell's equations. The radiation boundary condition for the open-region problem is enforced through the time-domain Green's function as used in integral-equation methods, yet keeping the sparsity of the FEM matrices. In this paper, the proposed method is applied to the time-domain analysis of TM scattering from conducting cylinders. At each time step, the fields inside the discretized domain are calculated using the FEM. The computed induced currents of earlier time steps, together with contributions from the present time step, give the radiation condition at the terminating surface. Numerical results are presented to illustrate the applicability of this technique.

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