# Abstracts

## Equivalent Current Density Reconstruction for Microwave Imaging Purposes

*S. Caorsi, G.L. Gragnani and M. Pastorino. "Equivalent Current Density Reconstruction for Microwave Imaging Purposes." 1989 Transactions on Microwave Theory and Techniques 37.5 (May 1989 [T-MTT]): 910-916.*

The possibilities of reconstructing the distribution of the equivalent current density vector in a domain with a known volume, V, inside which dielectric scatterers stand at arbitrary locations, are studied by means of numerical computer simulations. An integrodifferential formulation of the three-dimensional electromagnetic inverse scattering is transformed into matrix form through the application of the moment method. A pseudoinversion algorithm overcoming ill-conditioned problems is used to obtain the distribution of the equivalent current density also in the case where the input data (i.e., the simulated values of the scattered field vector to be obtained in an observation domain) are affected either by Gaussian noise or by uniformly distributed errors. The results furnish information that could be used to devise a possible imaging method for detecting the locations and surface shapes of scattering objects.

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