

**A NEW SIMPLE ANALYTICAL PROCEDURE
FOR EVALUATION OF MATRIX ELEMENTS
OF VOLUMETRIC INTEGRAL OPERATORS
OF MAXWELL'S EQUATIONS**

E. Bleszynski, M. Bleszynski and T. Jaroszewics

Monopole Research

Thousand Oaks, Ca 91360

Abstract

We describe a new analytical procedure for computing matrix elements of the Green function appearing in volumetric integral equations. The proposed procedure reduces the 6-dimensional volumetric integrals, involving tensor and vector Green functions, to 4-dimensional surface integrals with nonsingular integrands. An important benefit of the developed formulation is that it does not require any commonly used singularity extraction procedures. Numerical applications of the method will be presented in the context of some representative examples.

