Abstracts

The application of the wave potential functions to the analysts of transient electromagnetic fields

The time-domain theory of the wave potential functions is applied to the analysis of transient electromagnetic field propagation for the first time. The field is represented in terms of two scalar wave potentials, instead of the six, electric and magnetic, field components. The problem of boundary conditions at dielectric interfaces and at conducting edges is addressed. The current implementation uses finite differences in the 4-D space-time numerical domain.

❑ Return to main document.