Abstracts

An Observation on the Sommerfeld-Integral Representation of the Electric Dyadic Green's Function for Layered Media (Short Papers)

The electric dyadic Green's function for layered dielectrics is discussed. It is well known that for the free-space electric dyadic Green's function /doublebar G//sub 0/ evaluation of the electric field at observation points within the source region requires specification of a "principal volume" along with the corresponding depolarizing dyad /doublebar L/. Special considerations are invoked for layered background media which are appropriate for the electromagnetics of integrated electronics. It is shown that use of the Sommerfeld-integral representation of the electric dyadic Green's function leads to an innate choice for the depolarizing dyad. A corresponding principal volume is subsequently identified; it is demonstrated that there exists an alternative choice for this excluding region which leads to the same depolarizing dyad.

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