Abstracts

General full-wave Green's functions in spectral domain for arbitrarily multilayered dielectric media

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In this paper, we present general analytical formulas of the full-wave spectral domain Green's functions for arbitrarily multilayered dielectric media. The Green's functions are two scalar potentials created by a horizontal dipole, corresponding two electromagnetic modes, transverse magnetic and transverse electric modes to the normal direction of the layer plane. The analytical formulas in spectral domain have simple form and are applicable to arbitrary number of the dielectric layers. The derivation of the formulas employs a technique developed for the derivation of the electrostatic Green's function in multilayered media. The Green's functions used in the spectral domain approach are also presented.

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