Abstracts

Scattering at a nonchiral-chiral interface in a coaxial waveguide

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A formally exact full-wave solution is presented for the problem of scattering at a nonchiral-chiral interface in a coaxial waveguide. The field components for the axisymmetric modes in a coaxial chirowaveguide are initially obtained. A new orthogonality relation for the modes is then proposed and used to find expansion coefficients for the electromagnetic fields in the coaxial chirowaveguide. The scattering matrix for the nonchiral-chiral dielectric discontinuity in a coaxial waveguide is finally derived by enforcing the continuity conditions of the tangential field components across the interface. Numerical results for the reflection and transmission coefficients at the nonchiral-chiral interface in a coaxial waveguide are presented.

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