Abstracts

A Decoupled Formulation of the Vector Wave Equation in Orthogonal Curvilinear Coordinates, with Application to Ferrite-Filled and Curved Waveguides of General Cross Section

The introduction of a double complex-number system and the combining of the transverse field components into a compact composite structure enable the wave equation to be expressed in a form in which certain mathematical combinations of field components appear as entities completely decoupled from each other. Hence the equations can be solved for these combinations and ultimately for the components themselves. The method appears limited to guides of constant cross section and of either 1) isotropic medium and curved axis, or 2) axially anisotropic nonreciprocal medium and straight axis.

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