Abstracts

Field Distribution in a Circular Waveguide with a Corrugated Dielectric Lining (Short Papers)

T.C. Rao and P. McCormack. "Field Distribution in a Circular Waveguide with a Corrugated Dielectric Lining (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.8 (Aug. 1991 [T-MTT]): 1424-1426.

The problem of wave propagation through a circular cylinder with a periodically interrupted dielectric lining is solved by a boundary value approach by considering the region between the corrugations as a medium with a tensor permittivity. The characteristic equation for the phase constant is derived by matching the field components. Solutions for the phase constant are obtained and the variation of the phase constant with the physical parameters is studied. The variation of the axial and circumferential electric field components in the transverse plane is also studied.

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