Abstracts

Transverse Electric Resonances in a Coaxial Line Containing Two Cylinders of Different Dielectric Constant

J.W. Carr. "Transverse Electric Resonances in a Coaxial Line Containing Two Cylinders of Different Dielectric Constant." 1955 Transactions on Microwave Theory and Techniques 3.4 (Jul. 1955 [T-MTT]): 41-44.

A coaxial line containing a medium of propagation consisting of two coaxial cylindrical cylinders of different dielectric constant is considered for the special case of TE/sub nm/ resonances, and numerical calculations are carried out for a few cases of the TE/sub 11/ type resonance. A reference paper called to the attention of the author by the reviewer treats the general condition of propagation in such a line. The numerical solutions to the cases of interest in this application were not performed, however, presumably since the interest was in propagating modes and since the general characteristic equation is quite complicated. It is shown here that consideration of transverse boundary conditions only leads to an equation which is much less complicated and which is equivalent to the reduction of the general characteristic equation (of the reference paper) when cutoff is approached.

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