Abstracts

Analysis of TEM Mode on a Curved Coaxial Transmission Line

J.J. Krempasky. "Analysis of TEM Mode on a Curved Coaxial Transmission Line." 1990 Transactions on Microwave Theory and Techniques 38.6 (Jun. 1990 [T-MTT]): 739-747.

Through the use of a perturbation approach, explicit expressions are derived for the changes in the electromagnetic field structure that occur when a TEM mode on a coaxial transmission line enters a bend in the line. All of these changes are evaluated to at least first order in the inverse of the radius of curvature of the coaxial line. An explicit expression is also constructed for the first nonvanishing correction term to the propagation constant, which turns out to be of second order. Graphical results are presented for the variation of the propagation constant as a function of curvature and other parameters characteristic of the coaxial line.

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