Abstracts

An Approximate Wave Equation for an Axially Symmetric Periodic Waveguide

C.R. James and G.B. Walker. "An Approximate Wave Equation for an Axially Symmetric Periodic Waveguide." 1966 Transactions on Microwave Theory and Techniques 14.9 (Sep. 1966 [T-MTT]): 428-430.

The field problem of wave propagation in a waveguide of periodically varying section is investigated. An orthogonal curvi-linear coordinate system is developed leading to a separable wave equation. As a result, the problem is reduced to solving Hills Equation. The discussion is limited to the case of a waveguide with slowly varying radius but there is some expectation that useful results would be obtained, particularly for axial fields, without this restriction.

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