Abstracts

A Penetrable Dielectric Waveguide with Periodically Varying Circular Cross Section

S.L.G. Lundqvist. "A Penetrable Dielectric Waveguide with Periodically Varying Circular Cross Section." 1987 Transactions on Microwave Theory and Techniques 35.3 (Mar. 1987 [T-MTT]): 282-287.

For a penetrable dielectric waveguide with a periodically varying circular cross section, the modes that are exponentially decreasing in the cladding are considered. Their axial wavenumbers are determined by the null field approach and some plots are given showing their frequency dependence. From the numerical results, it is observed that two modes propagating in opposite directions interact destructively when the real parts of their axial wavenumbers differ by a multiple of the wavenumber of the corrugations. Both an upper and a lower cutoff frequency exists above (below) which only leaky modes exist.

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