Abstracts

Wave Propagation in Coaxial-Cylindrical Slow-Wave Systems (Correspondence)

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Recent interest in E-type traveling-wave tubes, in which a ribbon-shaped electron beam is caused to follow a circular path by balancing the centrifugal force of the particle against a steady radial electric tield force, has led to an investigation of wave propagation in azimuthally reentrant and nonreentrant coaxial-cylindrical slow-wave structures. The study is facilitated by the simplifying approximation that the actual azimuthally-periodic slow-wave circuit, situated along the inner conductor, can be replaced by a smooth dielectric cylinder. While such a dielectric cylinder would probably not be employed in the construction of an actual tube, because of its small value of surface impedance, it serves as a convenient model in determining the general forms of functional dependence for the field equations.

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