# Abstracts

## Field Theory of Planar Helix Traveling-Wave Tube (Short Papers)

*D. Chadha, S. Aditya and R.K. Arora. "Field Theory of Planar Helix Traveling-Wave Tube (Short Papers)." 1983 Transactions on Microwave Theory and Techniques 31.1 (Jan. 1983 [T-MTT] (Joint Special Issue on Monolithic Microwave IC's)): 73-76.*

A pair of unidirectionally conducting screens, conducting in different directions, constitute a planar helix. The planar helix is proposed as a slow-wave structure for application in a traveling-wave tube (TWT). Field theory is applied to analyze the behavior of the planar helix in the presence of a flat electron beans present between the two screens. Results indicate the presence of three modes, with one mode having a negative attenuation constant, as in the case of the usual helix-type TWT. Curves are shown for a typical proposed planar TWT. Also, the effect of beam current is indicated.

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