Abstracts

On Radial Transmission Line Representations of Electromagnetic Fields in an Anisotropic Moving Medium (Correspondence)

I. Fukai and M. Suzuki. "On Radial Transmission Line Representations of Electromagnetic Fields in an Anisotropic Moving Medium (Correspondence)." 1971 Transactions on Microwave Theory and Techniques 19.11 (Nov. 1971 [T-MTT]): 882-883.

The problems of electromagnetic waves in moving isotropic or uniaxial mediums have been dealt with by numerous authors. Chawla and Unz considered the fields in a moving anisotropic plasma, and Chen and Cheng analyzed waves in an isotropic plasma in a moving dielectric medium. In this note we consider electromagnetic fields in a moving anisotropic medium and propose the network formulation of electromagnetic fields in the moving medium in the radial cylindrical coordinate. The method is an extension of the transmission line representation of electron beams on infinite magnetic fields. We can apply these results to the cases of any magnetic field intensity and, further, solve the complex problems for a stationary anisotropic plasma by a similar method.

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