

On the Derivation of the Generalized Telegraphist's Equations for Full-Wave Analysis of Chirowaveguides

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This letter discusses a formulation of the generalized telegraphist's equations for the rigorous analysis of chirowaveguides that has recently been reported in the literature. It is found that when a chiral medium is in contact with the perfect electric conducting wall of the waveguide, the boundary conditions are not satisfied on the wall. A new formulation is proposed to overcome this limitation. Both formulations are applied to the calculation of the dispersion diagrams and field distributions of the completely filled parallel-plate chirowaveguide and the results are compared. Our proposed formulation is found to provide satisfactory results when analyzing such a structure.

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