Abstracts

On the Representational Nonuniqueness of Uniform Waveguide Eigenvalue Formulas (Short Papers)

P.L. Overfelt. "On the Representational Nonuniqueness of Uniform Waveguide Eigenvalue Formulas (Short Papers)." 1992 Transactions on Microwave Theory and Techniques 40.5 (May 1992 [T-MTT]): 1014-1018.

In the following, we find that for uniform perfectly conducting waveguides characterized by rectilinear boundaries and exact eigenvalue formulas, such formulas are not representationally unique. They are specific examples of general homogeneous polynomials of degree p in q variables, known as q-ary, p-ic forms. Using the concepts of equivalence and congruence, we find that an infinite number of eigenvalue formulas (that are members of an equivalence or congruence class) may be associated with a given waveguide cross section.

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