Abstracts

Theoretical and experimental waveguide characterization of small wire scatterers

J. Reinert and A.F. Jacob. "Theoretical and experimental waveguide characterization of small wire scatterers." 2001 Transactions on Microwave Theory and Techniques 49.7 (Jul. 2001 [T-MTT]): 1266-1269.

A simple method is presented in this paper that allows us to verify numerically obtained polarizability tensors of electrically small scatterers by waveguide measurements. To this end, a model of the scattering process within the waveguide is developed. Measurements performed on a small helix in two different waveguide setups are compared to the theoretical data obtained from the model. A good agreement is demonstrated. Furthermore, the measured data are highly sensitive to the orientation of the scatterer within the waveguide. Thus, the polarizability tensors can be verified.

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