Abstracts

Effect of conductive perturber diameter on nonresonant measurement of interaction impedance for helical slow-wave structures

Sun-Shin Jung, A.V. Soukhov and Gun-Sik Park. "Effect of conductive perturber diameter on nonresonant measurement of interaction impedance for helical slow-wave structures." 2002 Transactions on Microwave Theory and Techniques 50.9 (Sep. 2002 [T-MTT]): 2196-2198.

The measurement accuracy of the interaction impedance for a helical slow-wave structure (SWS) using the nonresonant perturbation method has been studied using conductive wire perturbers with different diameters. Data obtained by the measurement were compared with a rigorous numerical analysis. It is shown that the measured values of the interaction impedance for the helical SWS converge to those obtained by using a three-dimensional finite-element computational method when the diameter of the perturber is reduced to less than 10% of the helix diameter.

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