Abstracts

Finite Difference Approach for Rigorous Full-Wave Analysis of Superconducting Microwave Structures

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A full-wave analysis of superconducting transmission line structures is presented. This approach avoids making any simplifying assumptions regarding the strip thickness and the electromagnetic wave inside the superconductor. The propagation constant, as well as the attenuation constant, are obtained rigorously by solving the eigen value problem resulting from the discretization of the wave equations using finite difference method. The corresponding eigen vectors are the possible modes. The current distribution inside the superconducting materials and the electromagnetic fields in the structure can be easily obtained.

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