Abstracts

ALPS - A new fast frequency-sweep procedure for microwave devices

D.-K. Sun, Z. Cendes and J.-F. Lee. "ALPS - A new fast frequency-sweep procedure for microwave devices." 2001 Transactions on Microwave Theory and Techniques 49.2 (Feb. 2001 [T-MTT]): 398-402.

The discretization of Maxwell equations results in a polynomial matrix equation in frequency. In this paper, we present a robust and efficient algorithm for solving the polynomial matrix equation. To solve this equation for a broad bandwidth, one previously performs a discrete frequency sweep where the resulting matrix needs to be inverted at numerous frequencies, while current procedure requires only one matrix inversion. Speed improvements compared to the discrete sweep range from 10 to 100 times, depending on number of resonance peaks encountered.

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