Abstracts

Analysis and design of active antenna arrays

K. Liu, S.M. El-Ghazaly, V. Nair, M. Deshpande, N. El-Zein and H. Goronkin. "Analysis and design of active antenna arrays." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1383-1386 vol.2.

In this paper, the FDTD method is extended successfully to analyze active antennas using Z-transform method for small signal model and by a stable scheme for large signal model. The two approaches are validated by comparison with analytical impedance expression in frequency domain. Through these approaches, we analyze active antennas and antenna arrays containing tunnel diodes. Effects of various device parameters are investigated in order to find desired oscillations. Single and array active antennas are designed and tested. Experimental and simulated results are given and compared.

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