Abstracts

Feasible adjoint sensitivity technique for EM design optimization (2002 Vol. II [MWSYM])

N.K. Georgieva, S. Glavic, M.H. Bakr and J.W. Bandler. "Feasible adjoint sensitivity technique for EM design optimization (2002 Vol. II [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 971-974 vol.2.

The adjoint variable method for frequency domain design sensitivity analysis is proposed for the optimization of wire and printed structures analyzed by the Method of Moments (MoM). We focus on the construction of the adjoint system using a feasible technique which requires only minor modifications of existing MoM codes. The solution to the adjoint problem is obtained with very little overhead once the original problem is solved. The gradient of the objective function is consequently computed through a single analysis regardless of the number of the design parameters. The concept is illustrated through the design of a Yagi-Uda array and a rectangular patch antenna using suitable MoM simulators.

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