Abstracts

Exact adjoint sensitivity analysis for neural based microwave modeling and design

Jianjun Xu, M.C.E. Yagoub, Runtao Ding and Qi-Jun Zhang. "Exact adjoint sensitivity analysis for neural based microwave modeling and design." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1015-1018 vol.2.

For the first time, an adjoint neural network method is introduced for sensitivity analysis in neural-based microwave modeling and design. Exact first and second order sensitivities are systematically calculated for generic microwave neural models including variety of knowledge based neural models embedding microwave empirical information. A new formulation allows the models to learn both the input/output behavior of the modeling problem and its derivative data simultaneously. Examples for passive and active microwave modeling and simulation are presented.

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