Abstracts

Neural inverse space mapping EM-optimization

J.W. Bandler, M.A. Ismail, J.E. Rayas-Sanchez and Q.J. Zhang. "Neural inverse space mapping EM-optimization." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1007-1010 vol.2.

For the first time, we present Neural Inverse Space Mapping (NISM) optimization for EM-based design of microwave structures. The inverse of the mapping from the fine to the coarse model parameter spaces is exploited for the first time in a Space Mapping algorithm. NISM optimization does not require: up-front EM simulations, multipoint parameter extraction or frequency mapping. The inverse of the mapping is approximated by a neural network whose generalization performance is controlled through a network growing strategy. We contrast our new algorithm with Neural Space Mapping (NSM) optimization.

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