

Abstracts

Knowledge based neural models for microwave design

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Neural networks have recently gained attention as a fast and flexible vehicle for microwave modeling, simulation and optimization. In this paper a new microwave-oriented knowledge based neural network (KBNN) is proposed, in which microwave knowledge in the form of empirical functions or analytical approximations are incorporated into neural networks. The proposed technique enhances neural model accuracy especially for unseen data and reduces the need of large set of training data. The advantages of the KBNN are demonstrated by MESFET and transmission line modeling examples.

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