Abstracts

Analysis and Optimization of Microwave Circuits & Devices Using Neural Network Models

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This paper presents a new approach to microwave circuit analysis and optimization featuring neural network models at either device or circuit levels. At the device level, the neural network represents a physics-oriented FET model yet without the need to solve device physics equations repeatedly during optimization. At the circuit level, the neural network speeds up optimization by replacing repeated circuit simulations. Compared to existing polynomial or table look up models used in analysis and optimization, the proposed approach has the potential to handle high-dimensional and highly nonlinear problems.

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