Abstracts

Nonlinear Circuit Optimization with Dynamically Integrated Physical Device Models

The state of the art in FET circuit optimization is advanced. Our approach, which is directed at the next generation tools for yield optimization, dynamically integrates physics-based device models. We treat the Khatibzadeh and Trew FET model in a novel formulation of harmonic balance simulation. Adjoint sensitivity analysis allows efficient optimization of parameters such as device dimensions, material-related parameters, doping profile, channel thickness, etc. We demonstrate parameter extraction and power amplifier design.

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