# Abstracts

## A global modeling approach using interpolating wavelets

A MESFET and a two-dimensional cavity enclosing a cylinder are simulated using a nonuniform mesh generated by an interpolating wavelet scheme. A self-adaptive mesh is implemented and controlled by the wavelet coefficient threshold. A fine mesh can therefore be used in domains where the unknown quantities are varying rapidly and a coarse mesh can be used where the unknowns are varying slowly. It is shown that good accuracy can be achieved while compressing the number of unknowns by 50 to 80% during the whole simulation. This represents the on going effort toward a numerical technique that uses wavelets to solve both Maxwell's equations and the semiconductor equations. Such a method is of great interest to deal with the multi-scale problem that is the full wave simulation of active microwave circuits.

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