

Robust multigrid preconditioner for fast finite element modeling of microwave devices

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A robust preconditioning technique is presented for the fast finite element modeling of microwave devices. The proposed preconditioner is based on a multigrid scheme for the vector-scalar potential finite element formulation of electromagnetic problems. Numerical experiments from the application of the new preconditioner to the finite element analysis of microwave devices are used to demonstrate its superior numerical convergence and efficient memory usage.

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