Abstracts

Determining the steady-state responses in RF circuits using GMRES, CGS and BICGSTAB solution in sSPICE for Linux

sSPICE, an extension of SPICE3f5 for Linux, is under development to determine the steady-state responses for RF integrated circuits. The shooting-Newton algorithm for steady-state determination is incorporated with solution of the resulting iterates using the Krylov-subspace methods, GMRES, CGS, and BICGSTAB. The direct method shows much more computer efficiency than the regular transient analysis in SPICE, Only small improvements are seen using the explicit matrix instead of Gaussian elimination methods. Using the implicit form of GMRES resulted in improvements over the explicit GMRES and over the shooting-Newton Gaussian elimination method.

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