Abstracts

Scaleability of DC/AC non-linear dispersion models for microwave FETs

V.I. Cojocaru and T.J. Brazil. "Scaleability of DC/AC non-linear dispersion models for microwave FETs." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 387-390.

This paper addresses the issue of scaleability in circuit based models for FETs, emphasising for the first time the particularly difficult problems associated with the scaleability of DC/AC dispersion phenomena. Results of a study carried out on both MESFET and PHEMT foundry processes, show that while the differential DC/AC transconductance obeys straightforward scaling rules, the output conductance does not. An equivalent circuit based solution that incorporates a differential DC/AC dispersion modelling methodology is presented. The solution is compact, obeys the required conservation constraints and can account for the scaling inconsistencies observed in the output conductance.

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