Abstracts

Nonlinear III-V HBT compact models: do we have what we need?

J. Scott. "Nonlinear III-V HBT compact models: do we have what we need?." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 663-666 vol.2.

Within the large body of literature on models for III-V HBTs it now seems possible to find compact formulations with extractable parameters that model all important device characteristics. Predictions are as accurate as possible given the limitation of quasi-static host simulators. Some recommended strategies for extraction of parameters for certain formulations are given. Despite accurate formulation, some aspects may be better left out of models in the interest of expediency, with no significant reduction of final performance. Transit time remains difficult, and limitations of simulators swamp discrepancies between measurement and predictions of even apparently-precise models. It is concluded that compact models, if not simulators, are as physically precise as we should bother to make them.

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