# Abstracts

## 16-Term Error Model and Calibration Procedure for On-Wafer Network Analysis Measurements (Dec. 1991 [T-MTT])

*J.V. Butler, D.K. Rytting, M.F. Iskander, R.D. Pollard and M.V. Bossche. "16-Term Error Model and Calibration Procedure for On-Wafer Network Analysis Measurements (Dec. 1991 [T-MTT])." 1991 Transactions on Microwave Theory and Techniques 39.12 (Dec. 1991 [T-MTT] (1991 Symposium Issue)): 2211-2217.*

Vector network measurements are enhanced by calibrating the measurement system over the entire band of interest. This is presently done using a 12-term error correction model. Many measurement systems including open air devices, such as MMIC wafer probes, contain leakage and coupling error terms not modeled in current calibration systems. In this paper all error terms in such a system are included in a new 16-term error model and calibration procedure. Corrected measurements using the new 16-term calibration procedure are compared with TRL and 12-term calibration measurements and excellent agreement is observed for a non-leaky system. For a leaky system, the 12-term model is shown to break down while the 16-term model retains its accuracy. These results validate the accuracy and viability of the new calibration procedure for MMIC wafer probe measurements and other measurement systems containing leakage.

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