# Abstracts

## Enhanced skin effect for partial-element equivalent-circuit (PEEC) models

*K.M. Coperich, A.E. Ruehli and A. Cangellaris. "Enhanced skin effect for partial-element equivalent-circuit (PEEC) models." 2000 Transactions on Microwave Theory and Techniques 48.9 (Sep. 2000 [T-MTT] (Mini-Special Issue on Research Reported at the 8th Topical Meeting on Electrical Performance of Electronic Packaging (EPEP) 1999)): 1435-1442.*

In this paper, a skin-effect modeling approach is presented that is suitable for all frequency regimes of interest and therefore is most appropriate for transient interconnect analysis. Yet, the new formulation lends itself to a model that can be abstracted for use in conjunction with surface integral and finite difference-based electromagnetic tools for interconnect modeling. While a volume filament technique is not computationally feasible at high frequencies, where a fine discretization is necessary, the formulation that is presented avoids this difficulty by carefully casting the behavior of a conductor into the form of a global surface impedance, thus requiring fewer unknowns. Several examples illustrating the ability of the proposed model to accurately capture proximity and skin-effect behaviors will be shown, Interconnect resistance and inductance per-unit-length results are given and compared with those obtained using different models.

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