Abstracts

Domain decomposition approach for capacitance computation of nonorthogonal interconnect structures

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In this paper we apply the domain decomposition approach in conjunction with the finite difference (FD) method to compute efficiently the capacitance matrixes of crossovers and via type of interconnect structures, formed by traces that are nonorthogonal in general. In the past we have applied the FD method, in conjunction with the perfectly matched layer (PML) and the impedance boundary condition for FD mesh truncation, to compute the capacitances of orthogonal interconnect configurations. In this work we extend the above approach to apply to more general geometries, e.g., vias and crossovers with arbitrary angles. The paper presents some representative numerical results and examines the convergence and efficiency issues of the proposed algorithm.

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