Abstracts

Fast simulation of large-scale planar circuits using an object-oriented sparse solver

This paper presents a novel approach based on sparse matrix techniques to the assembly and inversion of linear systems that result from numerical modeling of planar structures using the method of moments (MoM). In order to render moment matrices as sparse as possible, one can take advantage of different types and levels of sparseness, both natural and approximate. For efficient storage and inversion of sparse linear systems, a block decomposition of the moment matrix is proposed. The software implementation of this approach in a CAD package demands full utilization of object-oriented programming techniques.

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