Abstracts

An impedance matrix transformation for planar circuit integral equation solvers

We describe an efficient analysis of planar circuits which makes use of a state-of-the-art integral equation approach in conjunction with a new bandwidth reduction algorithm. The MPIE (mixed-potential integral equation) is formulated by considering the recently introduced closed form expressions for the Green's functions; standard roof-top basis functions are used during the discretization of the Method of Moments. The matrix sparseness introduced by a thresholding procedure has proven sufficient for the application of an effective bandwidth reduction algorithm which yields, in all the considered cases, a significant reduction of computer effort (maximum speed-ups of about 18 times).

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