Abstracts

Vectorized Program Architectures for Supercomputer-Aided Circuit Design

V. Rizzoli, M. Ferlito and A. Neri. "Vectorized Program Architectures for Supercomputer-Aided Circuit Design." 1986 Transactions on Microwave Theory and Techniques 34.1 (Jan. 1986 [T-MTT]): 135-141.

Vector processors (supercomputers) can be effectively employed in MIC or MMIC applications to solve problems of large numerical size such as broad-band nonlinear design or statistical design (yield optimization). In order to fully exploit the capabilities of a vector hardware, any program architecture must be structured accordingly. This paper presents a possible approach to the "semantic" vectorization of microwave circuit design software. Speed-up factors of the order of 50 can be obtained on a typical vector processor (Cray X-MP), with respect to the most powerful scalar computers (CDC 7600), with cost reductions of more than one order of magnitude. This could broaden the horizon of microwave CAD techniques to include problems that are practically out of the reach of conventional systems.

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