Abstracts

The summation-by-parts algorithm-a new efficient technique for the rapid calculation of certain series arising in shielded planar structures

J.R. Mosig and A. Alvarez Melcon. "The summation-by-parts algorithm-a new efficient technique for the rapid calculation of certain series arising in shielded planar structures." 2002 Transactions on Microwave Theory and Techniques 50.1 (Jan. 2002, Part I [T-MTT] (Mini-Special Issue on 1999 International Microwave and Optoelectronics Conference (IMOC'99))): 215-218.

This paper presents a new technique for the convergence acceleration of a large class of series often arising in electromagnetic problems. The technique is based on the recursive application of the integration-by-parts technique to discrete sequences, thus the given name of the "summation-by-parts" technique. It is shown that the new technique greatly enhances the convergence rate of the series treated, and very small relative errors are obtained by performing a few simple operations. The new technique is applied to the efficient numerical calculation of the Green's functions in a parallel-plate waveguide.

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