# Abstracts

## A Computer Optimization of the Rayleigh-Ritz Method

*A.S. Vander Vorst, A.A. Laloux and R.J.M. Govaerts. "A Computer Optimization of the Rayleigh-Ritz Method." 1969 Transactions on Microwave Theory and Techniques 17.8 (Aug. 1969 [T-MTT] (Special Issue on Computer-Oriented Microwave Practices)): 454-460.*

A method has been developed to improve the use of the Rayleigh-Ritz procedure. A criterion is established, which is a measure of the cumulative improvement due to the addition of more and more terms in the series expansion. Without calculating the exact roots of determinantal equations, the convergence is accelerated by skipping unnecessary intermediate steps. The computation time is drastically reduced because the final result is obtained after only a few (not more than 5 to 7) values of determinants of increasing order. Inhomogeneneously loaded waveguides are chosen as an application because the exact solution is available to check the validity of the method. The results obtained with the method described in this paper are compared with other approximate procedures. The comparison shows a definite advantage for the suggested technique.

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