Abstracts

The Use of the Rayleigh-Ritz Method in Nonself-Adjoint Problems (Correspondence)

S. Kaplan and S.P. Morgan. "The Use of the Rayleigh-Ritz Method in Nonself-Adjoint Problems (Correspondence)." 1964 Transactions on Microwave Theory and Techniques 12.2 (Mar. 1964 [T-MTT]): 254-255.

This communication is a comment on the very interesting paper by S. P. Morgan in the May issue of these Transactions. It may be of interest to point out that problems similar to those discussed by Morgan arise in nuclear reactor theory. Here the operators are not, as in footnote, complex symmetric integral operators but they are nonselfadjoint, and there is considerable interest in finding their eigenvalues and eigenvectors by Rayleigh-Ritz methods. Morgan is correct, of course, in pointing out that the usual maximum and minimum criteria are lacking in these cases and that there are no bounds or error estimates. However the conclusion that it is impossible to use the methods may be overly pessimistic. The methods have been used in reactor theory with considerable success (measured by comparison with exact solutions), and this fact gives hope that they may be useful in laser applications.

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