

Conclusions

In summary, it has been shown that for axisymmetric radiative transfer with isotropic scattering, the eigenvalues corresponding to the coefficient matrix are all real and occur in plus and minus pairs. For the matrix, Eq. (3), of any even order p , the eigenvalues have individual bounds which reduces the work required in determining them. Also, closed form expressions for the eigenvectors have been found in terms of the eigenvalues. Thus, once the eigenvalues are obtained from Eq. (14), the solution to the homogeneous system of equations is given directly by Eq. (22) or Eq. (23) ($W = 1.0$) without requiring separate calculation of the eigenvectors. Hence, the task of finding the eigenvalues and a solution of Eq. (2) has been accomplished. The method presented is simple and should significantly reduce the difficulties in obtaining solutions of the homogeneous system of equations given in Eq. (2).

References

- ¹ Hsia, H. M. and Love, T. J., "Radiative Heat Transfer Between Parallel Plates Separated by a Nonisothermal Medium with Anisotropic Scattering," *Journal of Heat Transfer*, Vol. 89, Ser. C, No. 3, Aug. 1967, pp. 197-204.
- ² Hottel, H. C., Sarofim, A. F., Evans, L. B., and Vasalos, I. A., "Radiative Transfer in Anisotropically Scattering Media: Allowance for Fresnel Reflection at the Boundaries," *Journal of Heat Transfer*, Vol. 90, Ser. C, No. 1, Feb. 1968, pp. 56-62.
- ³ Merriam, R. L., "A Study of Radiative Characteristics of Condensed Gas Deposits on Cold Surfaces," Ph.D. thesis, 1968, Purdue Univ., Lafayette, Ind.
- ⁴ Love, T. J., "An Investigation of Radiant Heat Transfer in Absorbing, Emitting, and Scattering Media," ARL 63-3, Jan. 1963, Aeronautical Research Labs., Office of Aerospace Research, Wright-Patterson Air Force Base, Ohio.
- ⁵ Chandrasekhar, S., *Radiative Transfer*, Dover, New York, 1960, Chap. III.

Errata

Erratum: "Constitutive Equations for Bimodulus Elastic Materials"

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THE following figure was inadvertently omitted from the April issue:

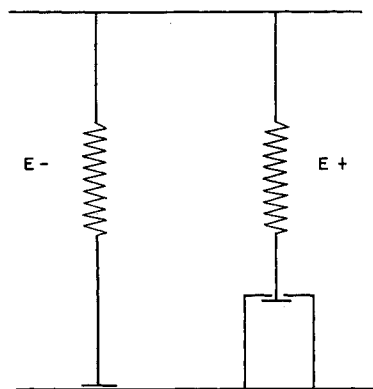


Fig. 1 - One-dimensional model.