

## PREFACE

The present undertaking was motivated by a desire to study, though to a very little extent, stellar atmosphere when it is idealised as plane-parallel atmosphere and the particles of the atmosphere are small which is the case of Rayleigh scattering, next simplest case to isotropic scattering. For the motivation we considered, it is desirable to get a good and ready approximate solution of the integral equation to which the transfer equations are reduced specially by the method of 'Principles of Invariance' and by the method of 'Discrete Ordinates'. For the purpose we studied several suitable approximate forms of H-function with anisotropic scattering. We applied these approximate forms to calculate laws of darkening and diffuse reflection for Rayleigh scattering, laws of darkening for multiplet lines and to the numerical determination of the H-function with anisotropic scattering for different values of the albedo  $\omega$ .

The introduction is divided into four parts :

- (1) Physical interpretation of Rayleigh scattering
- (2) The problem in radiative transfer
- (3) The equation of transfer
- (4) Works on Rayleigh scattering

The introduction is preceded by few pages stating the scope and object of the thesis.

After the third chapter, we attach a reprint of the published paper.

The present <sup>work</sup> paper has been completed under the guidance of Dr. S. Karanjai, Lecturer in Mathematics, University of North Bengal.

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