

CONTENTS

Preface

Introduction 1

OPERATOR PERTURBATION

1. Survey of Operator Perturbation Methods. 23
W. Kalkofen
2. Line Formation in Expanding Atmospheres: Multi-Level Calculations using Approximate Lambda Operators. 35
W.-R. Hamann
3. Stellar Atmospheres in Non-LTE: Model Construction and Line Formation Calculations using Approximate Lambda Operators. 67
K. Werner
4. Acceleration of Convergence 101
L. H. Auer
5. Line Formation in a Time-Dependent Atmosphere. 111
W. Kalkofen
6. Iterative Solution of Multilevel Transfer Problems. 135
Eugene H. Avrett and Rudolf Loeser
7. An Algorithm for the Simultaneous Solution of Thousands of Transfer Equations under Global Constraints. 163
Lawrence S. Anderson
8. Operator Perturbation for Differential Equations. 191
W. Kalkofen

POLARIZED RADIATION

9. A Gentle Introduction to Polarized Radiative Transfer. 213
David E. Rees
10. Non-LTE Polarized Radiative Transfer in Special Lines 241
David E. Rees and Graham A. Murphy
11. Transfer of Polarized Radiation, using 4×4 Matrices. 265
E. Landi Degli'Innocenti
12. Radiative Transfer in the Presence of Strong Magnetic Fields. 279
A. A. van Ballegoijen
13. An Integral Operator Technique of Radiative Transfer in Spherical Symmetry. 305
A. Peraiah
14. Discrete Ordinate Matrix Method. 341
M. Schmidt and R. Wehrse