Record Nr. UNINA9910780070803321 Autore Peraiah Annamaneni <1937-> **Titolo** An introduction to radiative transfer: methods and applications in astrophysics / / Annamaneni Peraiah [[electronic resource]] Cambridge:,: Cambridge University Press,, 2002 Pubbl/distr/stampa 1-107-11890-5 **ISBN** 1-282-46683-6 9786612466830 1-139-16447-3 0-511-64287-3 0-511-15531-X 0-511-55686-1 0-511-04925-0 Descrizione fisica 1 online resource (xii, 480 pages) : digital, PDF file(s) Disciplina 523.8/2 Soggetti Radiative transfer Stars - Radiation Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Title from publisher's bibliographic system (viewed on 05 Oct 2015). Note generali Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preliminaries; Contents; Preface; Chapter 1 Definitions of fundamental quantities of the radiation field; Chapter 2 The equation of radiative transfer: Chapter 3 Methods of solution of the transfer equation: Chapter 4 Two-point boundary problems; Chapter 5 Principle of invariance; Chapter 6 Discrete space theory; Chapter 7 Transfer equation in moving media: the observer frame; Chapter 8 Radiative transfer equation in the comoving frame; Chapter 9 Escape probability methods; Chapter 10 Operator perturbation methods; Chapter 11 Polarization; Chapter 12 Polarization in magnetic media Chapter 13 Multi-dimensional radiative transferSymbol index; Index

Sommario/riassunto

Astrophysicists have developed several very different methodologies for solving the radiative transfer equation. An Introduction to Radiative Transfer presents these techniques as applied to stellar atmospheres, planetary nebulae, supernovae, and other objects with similar

geometrical and physical conditions. Accurate methods, fast methods, probabilistic methods and approximate methods are all explained, including the latest and most advanced techniques. The book includes the different techniques used for computing line profiles, polarization due to resonance line scattering, polarization in magnetic media and similar phenomena. Exercises at the end of each chapter enable these methods to be put into practice, and enhance understanding of the subject. This 2001 book will be valuable to graduates, postgraduates and researchers in astrophysics.