1. Record Nr. UNISALENTO991003547869707536 Autore Weinberg, Steven **Titolo** Cosmology / Steven Weinberg Pubbl/distr/stampa New York: Oxford University Press, 2008 **ISBN** 9780198526827 Descrizione fisica xvii, 593 p.: ill.; 26 cm Classificazione LC QB981 52.9.512 Disciplina 523.1 Soggetti Cosmology Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1. The Expansion of the Universe -- 2. The Cosmic Microwave Radiation Background -- 3. The Early Universe -- 4. Inflation -- 5. General Theory of Small Fluctuations -- 6. Evolution of Cosmological Fluctuations -- 7. Anisotropies in the Microwave Sky -- 8. The Growth of Structure -- 9. Gravitational Lenses -- 10. Inflation as the Origin of Cosmological Fluctuations -- A. Some Useful Numbers -- B. Review of General Relativity -- C. Energy Transfer between Radiation and Electrons -- D. The Ergodic Theorem -- E. Gaussian Distributions -- F. Newtonian Cosmology -- G. Photon Polarization -- H. The Relativistic Boltzmann Equation. "This book is unique in the detailed, self-contained, and Sommario/riassunto comprehensive treatment that it gives to the ideas and formulas that are used and tested in modern cosmological research. It divides into two parts, each of which provides enough material for a one-semester graduate course. The first part deals chiefly with the isotropic and homogeneous average universe; the second part concentrates on the departures from the average universe. Throughout the book the author presents detailed analytic calculations of cosmological phenomena, rather than just report results obtained elsewhere by numerical computation. The book is up to date, and gives detailed accounts of topics such as recombination, microwave background polarization,

leptogenesis, gravitational lensing, structure formation, and multifield inflation, that are often treated superficially if at all in treatises on

cosmology. Copious references to current research literature are supplied.

Appendices include a brief introduction to general relativity, and a detailed derivation of the Boltzmann equation for photons and neutrinos used in calculations of cosmological evolution. Also provided is an assortment of problems."--BOOK JACKET.