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Nota di contenuto	Iron L-shell line formation in diverse astrophysical environments -- X-ray lines in stellar coronae -- Low-resolution spectra of stellar coronae and flares with exosat: The iron K line -- GINGA observations of AB Doradus -- Line spectroscopy in supernova remnants -- Thermal X-ray emission from centre-filled supernova remnants -- Non-Equilibrium, non-LTE Ionization in supernova remnants -- SPARTAN 1 X-ray observation of diffuse emission at the galactic center -- Iron line diagnostics in elliptical galaxies and cluster cooling flows -- Iron line emission features in clusters of galaxies -- Spartan-1 X-ray observations of iron line emission in the perseus cluster -- The distribution of iron in galaxy clusters — results from the spacelab 2 X-

ray telescope -- The spatial distribution of iron in the coma cluster of galaxies -- Iron lines from X-ray binaries -- Black hole candidates in binaries -- Iron lines in X-ray pulsators -- Iron lines in X-ray spectra of high mass X-ray binaries -- Properties of iron line emission in the X-ray binary GX301-2 -- Behaviour of the iron line in Cygnus X-1 during dips and persistent emission -- The EXOSAT GSPC iron line catalogue -- Narrow iron K line and warm iron K edge in pulse phase spectra of Hercules X-1 -- GINGA observation of X1820-303 and its iron-line emission -- The iron lines of SS433 -- Modelling of X-ray emission from SS433 -- Iron K $\alpha$  lines and the absorption structure of intermediate polars -- Simulation of the boundary layer in white dwarf with the SPH method -- Iron lines in AGN and Black Hole candidates -- Iron line emission and the distribution of cold matter in Seyfert galaxies -- Spectral features in AGN: Problems and questions -- The ionization structure of iron in AGN -- Iron K fluorescence and high energy bump from accretion disks in AGNs -- Line profiles from a disk around a rotating black hole -- X-ray spectra from clouds in active galactic nuclei -- The origin of the x-ray spectra of AGN -- Two phase accretion disks as a model for the x-ray emission from Seyfert galaxies -- Compton broadening of the iron line in NGC 3227 -- Iron K-lines from accretion disks around Schwarzschild black holes -- Rapid variability of iron line from NGC 6814 -- Iron line variability and geometry in Seyfert galaxies -- X-ray spectral changes in rapidly variable Seyfert galaxies -- Soft excess emission in Einstein SSS+MPC observations of seyfert galaxies — a possible interpretation as a blend of soft X-ray lines -- The X-ray astronomy mission sax -- Jet-X a joint european x-ray telescope for spectrum-X -- X-ray spectroscopy with the SODART/XSPECT telescope -- Capabilities of SODART/XSPECT for iron line detection -- Iron line spectroscopy with the AXAF calorimeter -- Operational capabilities of AXAF for iron line diagnostics -- The proposed Israeli X-ray satellite.

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### Sommario/riassunto

Transitions from the innermost shells of iron, especially the K- and L-shell lines, provide a powerful tool for probing the physical characteristics of hot plasmas in X-ray sources. Their strength and purity allow important conclusions to be drawn even with modest energy resolution. They should also help in studying the regions around black holes and neutron stars. In this book the state of the art and the most recent theoretical and experimental observations are presented. The book will be a valuable source for future satellite missions. It addresses both researchers and graduate students in astrophysics.

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