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Autore	Fleishman Gregory D
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Descrizione fisica	1 online resource (729 p.)
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Altri autori (Persone)	ToptyginI. N (Igor Nikolaevich)
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Note generali	Description based upon print version of record.
Nota di contenuto	Magnetohydrodynamics of the Cosmic Plasma -- Non-Linear MHD Waves and Discontinuities -- Instability of MHD motion and MHD turbulence -- Generation of magnetic field -- Plasma Dispersion -- Linear modes in the plasma -- Weak Turbulence and Magnetic Reconnection -- Wave-Particle Interactions -- Particle Transport -- Particle Acceleration -- Generation of linear modes by given electric current -- Microscopic Emission Processes in the Plasma -- Transport of Radiation -- Self-consistent models of astrophysical objects.
Sommario/riassunto	This volume offers a deep and detailed overview of plasma behavior in diverse astrophysical conditions. The presentation is based on a solid science foundation that includes well established physical laws of electromagnetism, hydrodynamics, classical and quantum mechanics and other relevant fields of science. Qualitative ideas and descriptions are followed by quantitative derivations and estimates of key physical quantities, and the results of theories and models are confronted with modern observational data obtained from numerous international science programs. Fundamental astrophysical phenomena, such as charged particle acceleration and magnetic field generation, are presented along with spectacular phenomena, such as stellar winds (including ultra-relativistic pulsar wind), supernova explosions and evolution of its remnants, and solar flares.