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Nota di contenuto	Preface; CONTENTS; A Hypothesis of the Magnetostatic Turbulence and its Implications for Astrophysics D. D. Ryutov and B. A. Remington; 1. Introduction; 2. Existence of magnetostatic turbulence; 3. Possible mechanisms generating magnetostatic turbulence; 4. Dissipation of the magnetostatic turbulence; 5. Large-scale motions on the background of the magnetostatic turbulence; 6. Discussion; References; Coherent Structures and Turbulence in Electron Plasmas M. Rom e, G. Bettega, F. Cavaliere, F. de Luca, A. Illiberi and R. Pozzoli; 1. Introduction; 2. Trapped plasma 3. Beam reflected by a potential barrier3.1. Experimental results; 3.2. Numerical simulations; 4. Conclusions; References; Self-Organization of Non-Linear Vortices in Plasma Lens for Ion-Beam-Focusing in Crossed Radial Electrical and Longitudinal Magnetic Fields V. Maslov, I. Onishchenko and A. Goncharov; 1. Introduction; 2. Joint Development of Two Instabilities; 3. Spatial Structure of Vortexes; 4. Nonlinear Dynamics of Vortices; References; Collective Processes at Kinetic Levels in Dusty Plasmas P. K. Shukla and B. Eliasson; 1. Introduction; 2. Dust ion-acoustic waves 3. Experimental observations of DIA shocks4. Langmuir envelope

solitons; 5. Surface dust vortices and zonal flows; 6. Summary; Acknowledgment; References; Magnetic Field Generation in Anisotropic Relativistic Plasma Regimes F. Pegoraro, F. Califano and D. del Sarto; 1. Magnetic fields in plasmas; 2. Laboratory relativistic plasmas; 3. Linear dispersion relation; 4. 3-D structure of the magnetic field generated by two inhomogeneous counterstreaming beams; 5. Conclusions; References

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3. Mesoscopic Mode and Relevant Electron Thermal Energy Balance Equation 4. Electron and Total Momentum Conservation Equations; 5. Innermost Asymptotic Region Acknowledgments; 6. Solution for the Innermost Region; 7. Asymptotic Matching and Growth Rates; 8. Relevant Comments; Acknowledgments; References; The Power of Being Flat: Conformal Invariance in Two-Dimensional Turbulence A. Celani; References; Stochastic Resonance: From Climate to Biology R. Benzi; 1. The mechanism of stochastic resonance in climate theory; 2. Stochastic resonance in complex systems; 3. Conclusions; References Energy-Enstrophy Theory for Coupled Fluid/Rotating Sphere System {Exact Solutions for Super-Rotations C. C. Lim

Sommario/riassunto

The contributions in this volume discuss numerous hot topics of interdisciplinary interest in plasma physics, astrophysics, and fluid dynamics. It collects the articles presented at a Workshop that has gathered world experts with a broad spectrum of research interests.
