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Nota di contenuto	 Preface; Contents; 1. Wave Turbulence: A Story Far from Over Alan C. Newell and Benno Rumpf; 1.1. Introduction; 1.2. A Tutorial on the Wave Turbulence Closure; 1.3. Solutions of the Kinetic Equation; 1.4. Experimental Evidence; 1.4.1. Capillary wave turbulence; 1.4.2. Gravity wave turbulence; 1.4.3. Vibrating plate turbulence: can one hear the Kolmogorov spectrum?; 1.4.4. Condensates of classical light waves; 1.5. Two Open Questions; 1.6. Open Challenges; Appendix 1. Derivation of the Governing Equation for Gravity-Capillary Waves; Appendix 2. Asymptotic Analysis; Acknowledgment; Bibliography 2. Fluctuations of the Energy Flux in Wave Turbulence S. Aumatre, E. Falcon and S. Fauve2.1. Introduction; 2.2. Spectra in the Gravity and Capillary Regimes; 2.3. Direct Measurement of the Injected Power; 2.4. Fluctuations of the Energy Flux; 2.5. Conclusion; Acknowledgment; Bibliography; 3. Wave Turbulence in Astrophysics Sebastien Galtier; 3.1. Introduction; 3.2. Waves and Turbulence in Space Plasmas; 3.2.1. Interplanetary medium; 3.2.2. Solar atmosphere; 3.3. Turbulence and Anisotropy; 3.3.1. Navier-Stokes turbulence; 3.3.2. Incompressible MHD turbulence; 3.3.2.1. Strong turbulence 3.3.2.2. Iroshnikov-Kraichnan spectrum3.3.2.3. Breakdown of isotropy; 3.3.2.4. Emergence of anisotropic laws; 3.3.3. Towards an Alfven wave turbulence theory: 3.3.4. Wave turbulence in compressible MHD; 3.3.5.

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	 Wave turbulence in Hall and electron MHD; 3.4. Wave Turbulence Formalism; 3.4.1. Wave amplitude equation; 3.4.2. Statistics and asymptotics; 3.4.3. Wave kinetic equations; 3.4.4. Finite flux solutions; 3.5. Main Results and Predictions; 3.5.1. Alfven wave turbulence; 3.5.2. Compressible MHD; 3.5.3. Whistler wave turbulence; 3.5.4. Hall MHD; 3.6. Conclusion and Perspectives 3.6.1. Observations3.6.2. Simulations; 3.6.3. Open questions; Bibliography; 4. Optical Wave Turbulence S. K. Turitsyn, S. A. Babin, E. G. Turitsyna, G. E. Falkovich, E. V. Podivilov and D. V. Churkin; 4.1. Optical Wave Turbulence: Introduction; 4.2. Basics of Fiber Lasers; 4.3. Key Mathematical Models; 4.4. Weak Optical Wave Turbulence in Fiber Lasers; 4.4.1. Theory of weak wave turbulence in the context of fiber laser; 4.4.2. Experiments; 4.4.3. Statistical properties and optical rogue wave generation via wave turbulence in RFLs; 4.5. Optical Wave Turbulence in Ultra-Long Fiber Lasers 4.5.1. Basics of ultra-long fiber lasers 4.5.3. Nonlinear broadening of optical spectra; 4.6. Developed Optical Wave Turbulence in Fiber Lasers; 4.6.1. The impact of fiber dispersion; 4.7. Spectral Condensate in Fiber Lasers; 4.8. Conclusions and Perspectives; Acknowledgments; Bibliography; 5. Wave Turbulence in a Thin Elastic Plate: The Sound of the Kolmogorov Spectrum? G. During and N. Mordant; 5.1. Weak Turbulence Theory for Thin Elastic Plates; 5.1.1. The Foppl-von Karman equations for a thin elastic plate 5.1.2. Kinetic equation and spectra
Sommario/riassunto	Wave or weak turbulence is a branch of science concerned with the evolution of random wave fields of all kinds and on all scales, from waves in galaxies to capillary waves on water surface, from waves in nonlinear optics to quantum fluids. In spite of the enormous diversity of wave fields in nature, there is a common conceptual and mathematical core which allows us to describe the processes of random wave interactions within the same conceptual paradigm, and in the same language. The development of this core and its links with the applications is the essence of wave turbulence science (WT) whi