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Sommario/riassunto	This book summarizes the main advances in the field of nonlinear evolution and pattern formation caused by longwave instabilities in fluids. It will allow readers to master the multiscale asymptotic methods and become familiar with applications of these methods in a variety of physical problems. Longwave instabilities are inherent to a variety of systems in fluid dynamics, geophysics, electrodynamics, biophysics, and many others. The techniques of the derivation of longwave amplitude equations, as well as the analysis of numerous nonlinear

equations, are discussed throughout. This book will be of value to researchers and graduate students in applied mathematics, physics, and engineering, in particular within the fields of fluid mechanics, heat and mass transfer theory, and nonlinear dynamics. .