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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 Amplitude equations for weakly nonlinear surface waves in variational problems -- 2 Global weak solutions of PDEs for compressible media: A compactness criterion to cover new physical situations -- 3 Second microlocalization and stabilization of damped wave equations on tori -- 4 A few remarks on hyperbolic systems with Zygmund in time coefficients -- 5 Well posedness of linearized Taylor equations in magnetohydrodynamics -- 6 Strictly dissipative non uniqueness with corners -- 7 On the solvability of certain degenerate partial differential operators -- 8 Location and Weyl formula for the eigenvalues of some non self-adjoint operators -- 9 A microscopic point of view on singularities in fluid models -- 10 Geometric optics for Rayleigh pulses in nonlinear elasticity -- 11 Recent results on stability of planar detonations.

Sommario/riassunto

The book collects the most relevant results from the INdAM Workshop "Shocks, Singularities and Oscillations in Nonlinear Optics and Fluid Mechanics" held in Rome, September 14-18, 2015. The contributions discuss recent major advances in the study of nonlinear hyperbolic systems, addressing general theoretical issues such as symmetrizability, singularities, low regularity or dispersive perturbations. It also investigates several physical phenomena where such systems are relevant, such as nonlinear optics, shock theory (stability, relaxation) and fluid mechanics (boundary layers, water waves, Euler equations, geophysical flows, etc.). It is a valuable resource for researchers in these fields. .