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Nota di contenuto	Frontmatter -- Contents -- 1. Introduction -- 2. Inverse scattering transform -- 3. Asymptotic behavior to initial value problems for some integrable evolution nonlinear equations -- 4. Interaction of solitons and its asymptotic properties -- 5. Hirota method -- 6. Bäcklund transformations and the infinitely many conservation laws -- 7. Multi-dimensional solitons and their stability -- 8. Numerical computation methods for some nonlinear evolution equations -- 9. The geometric theory of solitons -- 10. Global existence and blow up for the nonlinear evolution equations -- 11. The soliton movements of elementary particles in nonlinear quantum field -- 12. The theory of soliton movement of superconductive features -- 13. The soliton movements in condensed state systems -- Bibliography
Sommario/riassunto	This book provides an up-to-date overview of mathematical theories and research results on solitons, presenting related mathematical methods and applications as well as numerical experiments. Different types of soliton equations are covered along with their dynamical behaviors and applications from physics, making the book an essential reference for researchers and graduate students in applied mathematics and physics. ContentsIntroductionInverse scattering transformAsymptotic behavior to initial value problems for some

integrable evolution nonlinear equationsInteraction of solitons and its asymptotic propertiesHirota methodBäcklund transformations and the infinitely many conservation lawsMulti-dimensional solitons and their stabilityNumerical computation methods for some nonlinear evolution equationsThe geometric theory of solitonsGlobal existence and blow up for the nonlinear evolution equationsThe soliton movements of elementary particles in nonlinear quantum fieldThe theory of soliton movement of superconductive featuresThe soliton movements in condensed state systemsontents
