1. Record Nr. UNINA9910257385303321

Titolo	Integrability of Nonlinear Systems [[electronic resource] /] / edited by Yvette Kosmann-Schwarzbach, Basil Grammaticos, Kilkothur M. Tamizhmani
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1997
ISBN	3-540-69521-4
Edizione	[1st ed. 1997.]
Descrizione fisica	1 online resource (VII, 380 p.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 495
Disciplina	515/.355
Soggetti	Mathematical physics Fluids Mechanics Theoretical, Mathematical and Computational Physics Fluid- and Aerodynamics Classical Mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Nonlinear waves, solitons and IST -- Integrability — and how to detect it -- to the Hirota bilinear method -- Lie bialgebras, poisson Lie groups and dressing transformations -- Analytic and asymptotic methods for nonlinear singularity analysis: a review and extensions of tests for the Painlevé property -- Bifurcations, chaos, controlling and synchronization of certain nonlinear oscillators -- Eight lectures on integrable systems -- Bilinear formalism in solition theory -- Quantum and classical integrable systems.
Sommario/riassunto	The theory of nonlinear systems and, in particular, of integrable systems is related to several very active fields of research in theoretical physics. Many mathematical aspects of nonlinear systems, both continuous and discrete, are analyzed here with particular emphasis on the domains of inverse-scattering techniques, singularity analysis, the bilinear formalism, chaos in nonlinear oscillators, Lie-algebraic and group-theoretical methods, classical and quantum integrability, bihamiltonian structures. The book will be of considerable interest to

those who wish to study integrable systems, and to follow the future developments, both in mathematics and in theoretical physics, of the theory of integrability.