## Part I Integrable Systems: Hamiltonian Structure, Symmetries, Bäcklund and Darboux Transformations

Liouville Integrability of Zero Curvature Equations By Tu Guizhang	2
2+1 Dimensional Integrable Hierarchies, Lax Operators and Relevant Algebraic Structures By Cheng Yi	12
Determination of Nondegenerate Darboux Operators of First Order in 1+2 Dimensions By Zhou Zixiang	23
A Series of New Exact Solutions to the Nonlinear Equation $y_t + y_{xxx} - 6y^2y_x + 6\lambda y_x = 0$ By Au Chi (With 1 Figure)	29
Bäcklund Transformations for the Isospectral and Non-Isospectral KdV Hierarchies By Tian Chou and Zhang Youjin	35
Multiple Darboux Transformations and Multiple Pole Solutions for AKNS Hierarchy By Gu Xinshen	42
A Lie Algebraic Structure of G.J. and Its Gauge Equivalent Yang Hierarchies By Li Yishen, Cheng Yi, and Zeng Yunbo	47

Part II	Finite Dimensional	Dynamical Systems
---------	--------------------	-------------------

By M. Lakshmanan	۲
Classical Integrable Systems Generated Through Nonlinearization of Eigenvalue Problems By Cao Cewen and Geng Xianguo	2

VII



The Confocal Involutive System and the Integrability of the Nonlinearized Lax Systems of AKNS Hierarchy By Ma Wenxiu	79
Two Kinds of Finite-Dimensional Systems Related to the Generalized Schrödinger Equation By Zeng Yunbo and Li Yishen	85
Nonlinearization of the Lax Pair for the KdV Equation and Integrable Hamiltonian Systems By Zhuang Dawei and Lin Yuanqu	92

## Part III Quantum Aspects and Statistical Mechanics

<b>9</b> 8
111
136
146
152

## Part IV Physical Phenomena

Nonlinear Evolution Equations, Solitons, Chaos and Cellular Automata By M.J. Ablowitz, B.M. Herbst, and J.M. Keiser (With 14 Figures)	166
Kadomtsev-Petviashvili Equations in the Description of Water Waves By D. Levi (With 5 Figures)	1 <b>9</b> 0
Three-Dimensional Lattice Model Based on Soliton Theory By N. Saitoh	205
Soliton Phenomena in a Porous Medium By D. Takahashi, J.R. Sachs, and J. Satsuma (With 5 Figures)	214
Two-Dimensional Chiral Gauge Theories on a Lattice By Ma Zhongshui and Guo Shuohong	221
Transformation for the Solutions of the Two-Dimensional Toda Lattice By Liu Qiming	227

Part V	Other Topics	
	s on Nonlinear Evolution Equations gero	232
with Disper	lems of the Generalized Kuramoto-Sivashinsky Type Equations rsive Effects oling	236
	onlinearities Associated with KdV-like Two-Soliton Solutions bert and R. Willox	242
-	ingularities and the Riemann Surface for the Burgers Equation sis and J.D. Fournier (With 5 Figures)	252
	on Theory to String Theory and H. Kato	258
	r Equations from a String-Theoretical Point of View	266
$u_t = u_{xxx} + u_{xxx}$	nalysis and Integrability of the Evolution Equation $u^2u_{xx}+3uu_x^2+1/3u^4u_x$ hiel and R. Sahadevan	273
Subject In	dex	281
List of Par	rticipants	283
Index of C	Contributors	287