

Contents

Contributors	ix
Preface	xi
An Introduction to Solitons and the Inverse Scattering Method via the Korteweg-deVries Equation	
<i>Robert M. Miura</i>	1
A Generalization of the Inverse Scattering Problem for the One-Dimensional Schrödinger Equation and Application to the Korteweg-deVries Equation. A Variational Principle	
<i>H. E. Moses</i>	21
Prolongations, Bäcklund Transformations, and Lie Theory as Algorithms for Solving and Understanding Nonlinear Differential Equations	
<i>Robert Hermann</i>	33
Solitons and Physical Perturbations	
<i>A. R. Bishop</i>	61
Nonlinear Wave Concepts Applied to Deep-Water Waves	
<i>Henry C. Yuen and Bruce M. Lake</i>	89
Observations of Solitons on Nonlinear Dispersive Transmission Lines	
<i>Karl E. Lonngren</i>	127
Experiments on Solitons in Plasmas	
<i>H. Ikezi</i>	153
Fluxons in Long Josephson Junctions	
<i>R. D. Parmentier</i>	173

A Multisoliton Perturbation Theory <i>David W. McLaughlin and Alwyn C. Scott</i>	201
Soliton Propagation in a One-Dimensional Lattice under Shock Compression <i>Jad H. Batteh and John D. Powell</i>	257
Stationary "V-States," Interactions, Recurrence, and Breaking <i>Gary S. Deem and Norman J. Zabusky</i>	277
Biographical Notes on John Scott Russell	295
Index	297

