

TABLE OF CONTENTS

CLASSICAL SCATTERING THEORY

Multiple Scattering of Waves by Correlated Distributions	3
<i>V. Twersky</i>	
The S-Matrix and Sonar Echo Structure	10
<i>C.H. Wilcox</i>	
Some Applications of Functional Analysis in Classical Scattering	17
<i>R.E. Kleinman</i>	
Numerical Methods for Helmholtz-Type Equations	
in Unbounded Regions	26
<i>C.I. Goldstein</i>	
The Role of Surface Waves in Scattering Processes of	
Nuclear Physics and Acoustics	34
<i>H. Überall</i>	
Topics in Radar Scattering Theory	53
<i>W.S. Ament</i>	
Coherent Scattering from Rough Surfaces	60
<i>J.A. DeSanto</i>	
Application of a Technique of Franklin and Friedman	
to some Problems in Acoustics	71
<i>D.C. Stickler</i>	
High-Frequency Signal Propagation and Scattering	
in Guiding Channels	81
<i>L.B. Felsen</i>	
Scattering by Moving Bodies: The Quasi-Stationary Approximation	89
<i>J. Cooper</i>	
Variational Methods for Wave Scattering from Random Systems	92
<i>R.H. Andreo</i>	
Resonance Theory and Application	95
<i>L.R. Dragonette and L. Flax</i>	
Application of Elastodynamic Ray Theory to Diffraction by Cracks:	
Theory and Experiment	106
<i>J.D. Achenbach and L. Adler</i>	
Scattering of Acoustic Waves by Elastic and Viscoelastic Obstacles	
of Arbitrary Shape Immersed in Water	111
<i>Bo. Å. Peterson, V.V. Varadan, and V.K. Varadan</i>	
Multipole Resonances in Elastic Wave-Scattering from Cavities and in	
Acoustic Wave-Scattering from Bubbles and Droplets	114
<i>G. Gaunaud</i>	

MAINLY QUANTUM SCATTERING THEORY

Scattering Theory in the Mixed Representation	123
<i>R.G. Newton</i>	
Green and Lanford Revisited	128
<i>J.D. Dollard and B. Bourgeois</i>	

A Two-Hilbert-Space Formulation of Multichannel Scattering Theory	134
<i>C. Chandler and A.G. Gibson</i>	
Mathematical Questions of Quantum Mechanics of Many-Body Systems	149
<i>I.M. Sigal</i>	
Scattering from Point Interactions	159
<i>L.E. Thomas</i>	
Two Problems with Time-Dependent Hamiltonians	163
<i>J.S. Howland</i>	
Translation Invariance of N -Particle Schrödinger Operators in Homogeneous Magnetic Fields	169
<i>I.W. Herbst</i>	
Wave Operators for Multichannel Long-Range Scattering	175
<i>A.W. Saenz</i>	
Asymptotic Completeness in Classical Three-Body Scattering	182
<i>W.W. Zachary</i>	
Canonical Scattering Theory for Relativistic Particles	190
<i>F. Coester</i>	
Consistent Models of Spin 0 and $\frac{1}{2}$ Extended Particles Scattering in External Fields	197
<i>S.T. Ali and E. Prugovecki</i>	
Curved-Space Scattering	204
<i>J.M. Cohen, M.W. Kearney, and L.S. Kegeles</i>	
Levinson's Theorems and the Quantum-Mechanical Partition Function for Plasmas	211
<i>D. Bollé</i>	
A Cluster Expansion and Effective-Potential Representation of the Three-Body Problem	216
<i>T.A. Osborn and D. Eyre</i>	
Quantum-Statistical Mechanics and Scattering Theory on Homogeneous Spaces of Finite Volume	225
<i>N.E. Hurt</i>	

INVERSE SCATTERING THEORY AND RELATED TOPICS

What Do We Know about the Geometric Nature of Equations Which Can Be Solved Using the Inverse Scattering Technique?	233
<i>R. Hermann</i>	
Solitons, Solutions of Nonlinear Evolution Equations, and the Inverse Scattering Transform	240
<i>M.J. Ablowitz</i>	
Determining the Final Profiles from the Initial Profiles for the Full Three-Dimensional Three-Wave Resonant Interaction	247
<i>D.J. Kaup</i>	
Ordinary Differential Equations of Painlevé-Type and the Inverse Scattering Transform	255
<i>H. Segur</i>	
Exact Solutions for the Three-Dimensional Schrödinger Equation with Quasi-Local Potentials Obtained from a Three-Dimensional Gel'fand- Levitan Equation. Examples of Totally Reflectionless Scattering	260
<i>H.E. Moses</i>	

The Jost-Kohn Algorithm for Inverse Scattering	268
<i>R.T. Prosser</i>	
Application of Nonlinear Techniques to the Inverse Problem	271
<i>V.H. Weston</i>	
<i>N</i> -Dimensional Fast Fourier Transform Tomography for Incomplete Information and Its Application to Inverse Scattering Theory	277
<i>N.N. Bojarski</i>	
Two Acoustical Inverse Problems in Speech and Hearing	290
<i>M.M. Sondhi</i>	
Development of Physical Optics Inverse Scattering Techniques Using Radon Scattering Theory	301
<i>W.-M. Boerner</i>	
An Iterative Procedure for Solving Inverse Scattering Problems Arising from Active Remote Sensing	308
<i>Y.M. Chen</i>	
One-Dimensional Velocity Inversion for Acoustic Waves: Numerical Results	311
<i>S. Gray and N. Bleistein</i>	
Inverse Scattering Theory: Exact and Approximate Solutions	318
<i>A.K. Jordan</i>	
Functional Equation of Inverse Scattering for the Schrödinger Equation with Continuous and Discrete Spectra (Short Note)	327
<i>S. Ahn</i>	