

CONTENTS

PART I: FIELD THEORY AND INFINITE DIMENSIONAL SYSTEMS

Two Approaches to Toeplitz Operators on Fock Space	3
J. Janas and K. Rudol	
Quantization by Membranes and Integral Representations of Wave Functions	9
M. Karasev	
Noncommutative Geometry and Second Quantization	21
W. Marcinek	
Loop Variables in Quantum Gravity and Vassiliev Invariants	29
R.F. Picken	
Geometric Quantization of String Theory Using Twistor Approach	43
A.D. Popov and A.G. Sergeev	
Infinite-dimensional Supermanifolds of Solutions in Lagrangian Field Theories with Fermion Fields	53
T. Schmitt	
Plücker Embedding of the Hilbert Space Grassmannian and Boson-Fermion Correspondence via Coherent States	61
M. Spera	

PART II: COMPLEX STRUCTURES, SYMPLECTIC GEOMETRY AND POISSON STRUCTURES

Supercoherent States and Geometric Quantization of a Super Kähler Supermanifold	69
A.M. El Gradechi	

Holomorphic Representations and Coherent States	79
K.-H. Neeb	
On the Spectrum of the Geodesic Flow on Spheres	87
I.M. Mladenov and V.V. Tsanov	
Symplectic Realizations of the Galilei-Carroll Group	93
J. Nzotungicimpaye and J-B. Kayoya	
Covariant and Contravariant Berezin Symbols of Bounded Operators	99
A. Odzijewicz	
On Reproducing Kernels for Holomorphic Vector Bundles	109
Z. Pasternak-Winiarski	
Poisson Structures, Stability and Control	113
M. Puta	
Affine Poisson Structures in Analytical Mechanics	123
P. Urbański	

**PART III: COHERENT STATES, QUANTIZATION AND
REPRESENTATION THEORY**

Quantum Frames, Quantization and Dequantization	133
S.T. Ali and J-P. Antoine	
Group Contractions and Stratonovich-Weyl Kernels	147
O. Arratia, M. Gadella and M.A. del Olmo	
From Quantum Mechanics to Classical Mechanics and Back, via Coherent States	155
S. Berceanu	
Inönü-Wigner Contraction of Kinematical Group Representations	165
C. Cishahayo	
A Coherent State Associated with Shape-Invariant Potentials	175
T. Fukui and N. Aizawa	
Quantization, Curvature and Temperature: The de Sitter Universe	183
U. Moschella	
Phase Coherent Wavelets, Fourier Transform, Magnetic Resonance Imaging, and Synchronized Time-Domain Neural Networks	191
W. Schempp	

Riccati Equation over Torus and Semiclassical Quantization of Multiperiodic Motion	205
Yu. Vorobjev	
 PART IV: QUANTUM DYNAMICS, QUANTUM GROUPS, AND ALL THAT	
Hamiltonian Dynamics of Massless Objects	213
A. Bette	
Quantum Magnetic Top	223
M. Božić and D. Arsenović	
Quantum Mechanics on Z_m and q -deformed Heisenberg-Weyl Algebras	231
G. Chadzitaskos and J. Tolar	
Stochastic Aspects of the Quantum Dynamics	237
P. Garbaczewski	
Nonlinear Quantum Mechanics, the Separation Property, and a Stochastic Alternative to Certain Nonlinear Schrödinger Equations	245
G.A. Goldin and G.Svetlichny	
Transitional Currents for Massive Spin One-Half Particles	257
M.I. Krivoruchenko	
Twisting Poincaré Algebras	265
J. Lukierski, A. Nowicki, H. Ruegg and V.N. Tolstoy	
On Poles of the Analytic Continuation of Integral Curves of a Family of Ordinary Differential Equations	273
J. M. Myszewski	
A Covariant Approach to the Kustaanheimo-Stiefel Bundle in the Magnetic Monopole Theory	277
I.E. Pris and E. A. Tolkachev	
 Participants	287
Index	289