

CONTENTS

Part A Fermi Liquids

Pressure Comparison Between the Spherical Cellular Model and the Thomas-Fermi Model	3
<i>G. A. Baker, Jr.</i>	
Pair Excitations and Vertex Corrections in Fermi Fluids and the Dynamic Structure Function of Two-Dimensional ^3He	13
<i>H. M. Böhm, H. Godfrin, E. Krotscheck, H. J. Lauter, M. Meschke and M. Panholzer</i>	
Condensation of Helium in Wedges	25
<i>E. S. Hernández, F. Ancilotto, M. Barranco, R. Mayol and M. Pi</i>	
Non-Fermi-Liquid Behavior from the Fermi-Liquid Approach	35
<i>V. A. Khodel, J. W. Clark, H. Li, V. M. Yakovenko and M. V. Zverev</i>	
Theory of Third Sound and Stability of Thin ^3He – ^4He Superfluid Films	49
<i>M. D. Miller and E. Krotscheck</i>	
Generic Electron Mobility in Surface States on Helium Films	61
<i>E. Krotscheck and M. D. Miller</i>	
Pairing in Asymmetrical Fermi Systems	73
<i>K. F. Quader and R. Liao</i>	
Ground-State Properties of Small ^3He Drops from Quantum Monte Carlo Simulations	82
<i>E. Sola, J. Casulleras and J. Boronat</i>	
Ground-State Energy and Compressibility of a Disordered Two-Dimensional Electron Gas	92
<i>B. Tanatar, A. L. Subaşı, K. Esfarjani and S. M. Fazeli</i>	

Quasixcitons in Photoluminescence of Incompressible Quantum Liquids	103
<i>A. Wójs, A. Gładysiewicz and J. J. Quinn</i>	

Part B Bose Liquids

Quantum Boltzmann Liquids	117
<i>K. A. Gernoth, M. L. Ristig and T. Lindenau</i>	

Condensate Fraction in the Dynamic Structure Function of Bose Fluids	129
<i>M. Saarela, F. Mazzanti and V. Apaja</i>	

Part C Strongly-Correlated Electronic Systems

Electron Gas in High-Field Nanoscopic Transport: Metallic Carbon Nanotubes	143
<i>F. Green and D. Neilson</i>	

Evolution and Destruction of the Kondo Effect in a Capacitively Coupled Double Dot System	153
<i>D. E. Logan and M. R. Galpin</i>	

The Method of Increments — A Wavefunction-Based Ab-Initio Correlation Method For Solids	166
<i>B. Paulus</i>	

Fractionally Charged Excitations on Frustrated Lattices	177
<i>E. Runge, F. Pollmann and P. Fulde</i>	

5f Electrons in Actinides: Dual Nature and Photoemission Spectra	194
<i>G. Zwicknagl</i>	

Part D Magnetism

Magnetism in the Disordered Two-Dimensional Kondo-Necklace	209
<i>W. Brenig</i>	

On the de Haas-van Alphen Oscillation in 2D	218
<i>S. Fujita and D. L. Morabito</i>	

Dynamics in One-Dimensional Spin Systems – Density Matrix Renormalization Group Study	226
<i>S. Nishimoto and M. Arikawa</i>	

Frustrated Quantum Antiferromagnets: Application of High-Order Coupled Cluster Method	237
<i>J. Richter, R. Darradi, R. Zinke and R. F. Bishop</i>	

Vorticity and Antivorticity in Submicron Ferromagnetic Films	253
<i>H. Wang, M. Yan and C. E. Campbell</i>	

Part E Superconductivity

D-Wave Checkerboard Bose Condensate of Mobile Bipolarons	267
<i>A. S. Alexandrov</i>	

Five Possible Reasons Why High- T_c Superconductivity is Stalled	279
<i>M. Grether and M. de Llano</i>	

Multistability and Multi 2π -Kinks in the Frenkel–Kontorova Model: An Application to Arrays of Josephson Junctions	290
<i>K. E. Kūrten and C. Krattenthaler</i>	

Lowering of Boson-Fermion System Energy with a Gapped Cooper Resonant-Pair Dispersion Relation	301
<i>T. A. Mamedov and M. de Llano</i>	

The Concept of Correlated Density and its Application	314
<i>K. Morawetz, P. Lipavský, J. Koláček, E. H. Brandt and M. Schreiber</i>	

Competing Local and Non-Local Phase Correlations in Fermionic Systems with Resonant Pairing: The Boson–Fermion Scenario	328
<i>J. Ranninger</i>	

Superconducting Order Parameters in the Extended Hubbard Model: A Simple Mean-Field Study	337
<i>J. S. Thakur and M. P. Das</i>	

Part F Nuclear systems

Distribution of Maxima of the Antisymmetrized Wave Function for the Nucleons of a Closed-Shell and for the Nucleons of All Closed-Shells in a Nucleus	353
<i>G. S. Anagnostatos</i>	

Pairing of Strongly Correlated Nucleons	363
<i>W. H. Dickhoff</i>	

Short Range Correlations in Relativistic Nuclear Models <i>P. K. Panda, C. Providência and J. da Providência</i>	375
Quartetting in Attractive Fermi-Systems and Alpha Particle Condensation in Nuclear Systems <i>P. Schuck, Y. Funaki, H. Horiuchi, G. Röpke, A. Tohsaki and T. Yamada</i>	388
Alpha-Alpha and Alpha-Nucleus Potentials: An Energy-Density Functional Approach <i>Z. F. Shehadeh, A. K. Basak, M. N. A. Abdullah, M. A. Uddin, I. Reichstein, M. S. Sabra and F. B. Malik</i>	397

Part G Density Functional Theory and MD Simulations

Dynamics of Metal Clusters in Rare Gas Clusters <i>M. Baer, G. Bousquet, P. M. Dinh, F. Fehrer, P.-G. Reinhard and E. Suraud</i>	409
Kohn-Sham Calculations Combined with an Average Pair-Density Functional Theory <i>P. Gori-Giorgi and A. Savin</i>	419
Correlations, Collision Frequency and Optical Properties in Laser Excited Clusters <i>H. Reinholz, T. Raitza and G. Röpke</i>	430

Part H Biophysics

Condensed Matter Physics of Biomolecule Systems in a Differential Geometric Framework <i>H. Bohr, J. I. Ipsen and S. Markvorsen</i>	447
The Brain's View of the Natural World in Motion: Computing Structure from Function Using Directional Fourier Transformations <i>B. K. Dellen, J. W. Clark and R. Wessel</i>	465

Part I Quantum Information

Control and Error Prevention in Condensed Matter Quantum Computing Devices <i>M. S. Byrd and L.-A. Wu</i>	479
--	-----

Maxent Approach to Qubits	491
<i>C. M. Sarris, A. N. Proto and F. B. Malik</i>	
Part J New Formalisms	
Thermal Coherent States, a Broader Class of Mixed Coherent States, and Generalized Thermo-Field Dynamics	505
<i>R. F. Bishop and A. Vourdas</i>	
Ergodic Condition and Magnetic Models	522
<i>M. Howard Lee</i>	
From Thermodynamics to Maxent	533
<i>A. Plastino and E. M. F. Curado</i>	
Recent Progress in the Density-Matrix Renormalization Group	540
<i>U. Schollwöck</i>	
Author Index	553