

Contents

Preface	v
A short proof of the ionization conjecture in Müller theory RUPERT L. FRANK, PHAN THÀNH NAM, and HANNE VAN DEN BOSCH	1
Mean field dynamics of interacting fermionic systems MARCELLO PORTA	13
Correlations in disordered quantum harmonic oscillator systems: The effects of excitations and quantum quenches HOUSSAM ABDUL-RAHMAN, ROBERT SIMS, and GÜNTER STOLZ	31
The lattice Anderson model with discrete disorder JOHN Z. IMBRIE	49
Interacting fermions with quasi-random disorder VIERI MASTROPIETRO	65
Local density approximation for almost-bosonic anyons M. CORREGGI, D. LUNDHOLM, and N. ROUGERIE	77
Lieb-Robinson bounds, the spectral flow, and stability of the spectral gap for lattice fermion systems BRUNO NACHTERGAELE, ROBERT SIMS, and AMANDA YOUNG	93
Solvable models of interacting n -particle systems on quantum graphs JENS BOLTE and GEORGE GARFORTH	117
Nonlinear Sturm oscillation: From the interval to a star RAM BAND and AUGUST J. KRUEGER	129
Existence of the ground state for the NLS with potential on graphs CLAUDIO CACCIAPUOTI	155
Fredholm theory of differential operators on periodic graphs VLADIMIR RABINOVICH	173
Optimization of the lowest eigenvalue for leaky star graphs PAVEL EXNER and VLADIMIR LOTOREICHIK	187
Local eigenvalue asymptotics of the perturbed Krein Laplacian VINCENT BRUNEAU and GEORGI RAIKOV	197

Singular spectrum and recent results on hierarchical operators PER VON SOOSTEN and SIMONE WARZEL	215
On Parseval frames of exponentially decaying composite Wannier functions DAVID AUCKLY and PETER KUCHMENT	227
Non-demolition measurements of observables with general spectra M. BALLESTEROS, N. CRAWFORD, M. FRAAS, J. FRÖHLICH, and B. SCHUBNEL	241
Subfactors and quantum information theory PIETER NAAJKENS	257
Dressing up for length gauge: Mathematical aspects of a debate in quantum optics RAINER DICK	281
Random phase infinite coherent states: Construction and dynamics ALAIN JOYE and MARCO MERKLI	307
Effective evolution of open dimers MARCO MERKLI	323