

Contents

Preface	vii
Analysis and efficient computation for the dynamics of two-component Bose-Einstein condensates	
WEIZHU BAO	1
Quantised vortices, travelling coherent structures and superfluid turbulence	
NATALIA G. BERLOFF	27
Existence and properties of travelling waves for the Gross-Pitaevskii equation	
FABRICE BÉTHUEL, PHILIPPE GRAVEJAT, and JEAN-CLAUDE SAUT	55
On the semi-classical limit for the nonlinear Schrödinger equation	
RÉMI CARLES	105
The Gross-Pitaevskii equation in the energy space	
PATRICK GÉRARD	129
Scattering theory for the Gross-Pitaevskii equation	
KENJI NAKANISHI	149
Periodic oscillations of dark solitons in parabolic potentials	
DMITRY E. PELINOVSKY and PANAYOTIS G. KEVREKIDIS	159