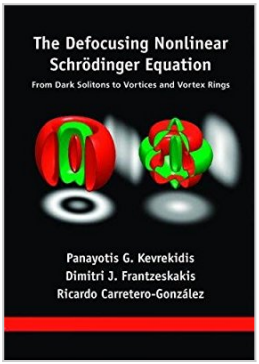

The Defocusing Nonlinear Schrodinger Equation: From Dark Solitons to Vortices and Vortex Rings

By P. G. Kevrekidis, D. J. Frantzeskakis, Ricardo Carretero-Gonzalez

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Bose-Einstein condensation is a phase transition in which a fraction of particles of a boson gas condenses into the same quantum state known as the Bose-Einstein condensate (BEC). The aim of this book is to present a wide array of findings in the realm of BECs and on the nonlinear Schrödinger-type models that arise therein.

The Defocusing Nonlinear Schrödinger Equation is a broad study of nonlinear excitations in self-defocusing nonlinear media. It summarizes state-of-the-art knowledge on the defocusing nonlinear Schrödinger-type models in a single volume and contains a wealth of resources, including over 800 references to relevant articles and monographs and a meticulous index for ease of navigation.

Audience: This book is intended for atomic and condensed-matter physicists, nonlinear scientists, and applied mathematicians. It will be equally valuable to beginners and experienced researchers in these fields.

Contents: Preface; Acknowledgments; Chapter 1: Introduction; Chapter 2: The One-Dimensional Case; Chapter 3: The Two-Dimensional Case; Chapter 4: The Three-Dimensional Case; Bibliography; Index.

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Editorial Review

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P. G. Kevrekidis is a Professor at University of Massachusetts, Amherst. He has authored over 450 publications and co-authored/edited five books. He is a Fellow of the APS and a Stanislaw M. Ulam Fellow at the Los Alamos National Laboratory, and he is a recipient of a Humboldt Fellowship, an NSF-CAREER award, the J.D. Crawford Prize in Dynamical Systems, and the Stephanos Pnevmatikos Prize for Research in Nonlinear Phenomena, among others.

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