1. Record Nr. UNINA9910830054803321

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Titolo	Nematicons : spatial optical solitons in nematic liquid crystals / / edited by Gaetano Assanto
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , 2013 ©2013
ISBN	1-118-41463-2 1-118-41459-4
Edizione	[1st edition]
Descrizione fisica	1 online resource (457 p.)
Collana	Wiley Series in Pure and Applied Optics
Classificazione	SCI053000
Disciplina	530.124 530.429
Soggetti	Solitons Nematic liquid crystals Liquid crystals - Spectra
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Nematicons; Contents; Preface; Acknowledgments; Contributors; Chapter 1. Nematicons; 1.1 Introduction; 1.1.1 Nematic Liquid Crystals; 1.1.2 Nonlinear Optics and Solitons; 1.1.3 Initial Results on Light Self-Focusing in Liquid Crystals; 1.2 Models; 1.2.1 Scalar Perturbative Model; 1.2.2 Anisotropic Perturbative Model; 1.3 Numerical Simulations; 1.3.1 Nematicon Profile; 1.3.2 Gaussian Input; 1.4 Experimental Observations; 1.4.1 Nematicon-Nematicon Interactions; 1.4.2 Modulational Instability; 1.5 Conclusions; References; Chapter 2. Features of Strongly Nonlocal Spatial Solitons 2.1 Introduction2.2 Phenomenological Theory of Strongly Nonlocal Spatial Solitons; 2.2.1 The Nonlinearly Induced Refractive Index Change of Materials; 2.2.2 From the Nonlocal Nonlinear Schrodinger Equation to the Snyder-Mitchell Model; 2.2.3 An Accessible Soliton of the Snyder-Mitchell Model; 2.2.4 Breather and Soliton Clusters of the Snyder-Mitchell Model; 2.2.5 Complex-Variable-Function Gaussian Breathers and Solitons; 2.2.6 Self-Induced Fractional Fourier Transform; 2.3 Nonlocal Spatial Solitons in Nematic Liquid Crystals;

2.3.1 Voltage-Controllable Characteristic Length of NLC
2.3.2 Nematicons as Strongly Nonlocal Spatial Solitons2.3.3 Nematicon-Nematicon Interactions; 2.4 Conclusion; Appendix 2.A: Proof of the Equivalence of the Snyder-Mitchell Model (Eq. 2.16) and the Strongly Nonlocal Model (Eq. 2.11); Appendix 2.B: Perturbative Solution for a Single Soliton of the NNLSE (Eq. 2.4) in NLC; References; Chapter 3. Theoretical Approaches to Nonlinear Wave Evolution in Higher Dimensions; 3.1 Simple Example of Multiple Scales Analysis; 3.2 Survey of Perturbation Methods for Solitary Waves; 3.3 Linearized Perturbation Theory for Nonlinear Schrodinger Equation
3.4 Modulation Theory: Nonlinear Schrodinger Equation3.5 Radiation Loss; 3.6 Solitary Waves in Nematic Liquid Crystals: Nematicons; 3.7 Radiation Loss for The Nematicon Equations; 3.8 Choice of Trial Function; 3.9 Conclusions; Appendix 3.A: Integrals; Appendix 3.B: Shelf Radius; References; Chapter 4. Soliton Families in Strongly Nonlocal Media; 4.1 Introduction; 4.2 Mathematical Models; 4.2.1 General; 4.2.2 Nonlocality Through Response Function; 4.3 Soliton Families in Strongly Nonlocal Nonlinear Media; 4.3.1 One-Dimensional Hermite-Gaussian Spatial Solitons
4.3.2 Two-Dimensional Laguerre-Gaussian Soliton Families4.3.3 Accessible Solitons in the General Model of Beam Propagation in NLC; 4.3.4 Two-Dimensional Self-Similar Hermite-Gaussian Spatial Solitons; 4.3.5 Two-Dimensional Whittaker Solitons; 4.4 Conclusions; References; Chapter 5. External Control of Nematicon Paths; 5.1 Introduction; 5.2 Basic Equations; 5.3 Nematicon Control with External Light Beams; 5.3.1 Interaction with Circular Spots; 5.3.2 Dielectric Interfaces; 5.3.3 Comments; 5.4 Voltage Control of Nematicon Walk-Off; 5.4.1 Out-of-Plane Steering of Nematicons
5.4.2 In-Plane Steering of Nematicon

Sommario/riassunto

The first book of its kind to introduce the fundamentals, basic features and models, potential applications and novel phenomena and its important applications in liquid crystal technology. Recognized leader in the field Gaetano Assanto outlines the peculiar characteristics of nematicons and the promise they have for the future growth of this captivating new field.