1. Record Nr. UNINA9910454326903321

Titolo	Energy localisation and transfer [[electronic resource] /] / editors, Thierry Dauxois ... [et al.]
Pubbl/distr/stampa	River Edge, NJ, : World Scientific, c2004
ISBN	1-281-93475-5 9786611934750 981-279-486-7
Descrizione fisica	1 online resource (428 p.)
Collana	Advanced series in nonlinear dynamics ; ; v. 22
Altri autori (Persone)	DauxoisT <1967-> (Thierry)
Disciplina	539/.6
Soggetti	Energy transfer Molecular dynamics Josephson junctions Electronic books.
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 and index.
Nota di contenuto	CONTENTS ; Preface ; CHAPTER 1 COMPUTATIONAL STUDIES OF DISCRETE BREATHERS ; 1 Introduction ; 2 A bit on numerics of solving ODEs ; 3 Observing and analyzing breathers in numerical runs ; 3.1 Targeted initial conditions ; 3.2 Breathers in transient processes 3.3 Breathers in thermal equilibrium 4 Obtaining breathers up to machine precision: Part I ; 4.1 Method No.1 - designing a map ; 4.2 Method No.2 - saddles on the rim with space-time separation ; 4.3 Method No.3 - homoclinic orbits with time-space separation 5 Obtaining breathers up to machine precision: Part II 5.1 Method No.4 - Newton in phase space ; 5.2 Method No.5 - steepest descent in phase space ; 5.3 Symmetries ; 6 Perturbing breathers ; 6.1 Linear stability analysis ; 6.2 Plane wave scattering 7 Breathers in dissipative systems 7.1

Obtaining dissipative breathers ; 7.2 Perturbing dissipative breathers ; 8 Computing quantum breathers ; 8.1 The dimer ; 8.2 The trimer ; 8.3 Quantum roto-breathers ; 9 Some applications instead of conclusions ; Acknowledgments ; References

CHAPTER 2 VIBRATIONAL SPECTROSCOPY AND QUANTUM LOCALIZATION 1

Introduction ; 1.1 Nonlinear dynamics and energy localization ; 1.2 Nonlinear dynamics and vibrational spectroscopy ; 2 Vibrational spectroscopy techniques ; 2.1 Some definitions ; 2.2 Optical techniques 2.3 Neutron scattering techniques

Sommario/riassunto

This book provides an introduction to localised excitations in spatially discrete systems, from the experimental, numerical and mathematical points of view. Also known as discrete breathers, nonlinear lattice excitations and intrinsic localised modes, these are spatially localised time periodic motions in networks of dynamical units. Examples of such networks are molecular crystals, biomolecules, and arrays of Josephson superconducting junctions. The book also addresses the formation of discrete breathers and their potential role in energy transfer in such systems.
Contents:
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