1. Record Nr. UNINA9910784827903321

Titolo	Quantum dots [[electronic resource] /] / editors, E. Borovitskaya, Michael S. Shur
Pubbl/distr/stampa	River Edge, N.J., : World Scientific, c2002
ISBN	981-277-767-9
Descrizione fisica	1 online resource (214 p.)
Collana	Selected topics in electronics and systems ; ; vol. 25
Altri autori (Persone)	BorovitskayaE (Elena) ShurMichael
Disciplina	537.6/22
Soggetti	Quantum dots Energy levels (Quantum mechanics) Semiconductors
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.
Nota di contenuto	CONTENTS ; Low-Dimensional Systems ; Energy States in Quantum Dots ; 1. Introduction ; 2. Description of Pseudopotential Techniques ; 2.1. Calculation of the strain profile ; 2.2. Constructing the single particle Hamiltonian ; 3. Recent Applications 3.1. Pyramidal quantum dots: Single particle electron and hole states 3.2. Lens shaped dots: The effect of changing the shape and composition profile ; 3.3. Multiple-exciton states in self-assembled quantum dots ; References ; Self-Organized Quantum Dots ; 1 Introduction 2 Quantum Dot Self-Assembly 2.1 Equilibrium properties of coherent 3D islands ; 2.2 Formation and evolution of coherent 3D islands ; 3 Self-Organization of 3D island ""Quantum Dots"" ; 3.1 Single Layers ; 3.2 Multilayers ; 3.3 Summary and Outlook ; References Growth Structures and Optical Properties of III-Nitride Quantum Dots 1. Introduction ; 2. Growth and Structures ; 2.1 MBE ; 2.2 MOCVD ; 2.3 Other Techniques

; 3. Optical Properties of Ill-Nitride QDs ;
3.1 Effects of quantum confinement strain and polarization
; 3.2 GaN quantum dots
3.3 InGaN quantum dots 4. Summary ;
References ; Theory of Threshold Characteristics of Quantum Dot Lasers: Effect of Quantum Dot Parameter Dispersion
; 1. Introduction ; 2. Basic Equations ; 3. Gain Spectrum and Spontaneous Radiative Recombination Current
3.1. Equilibrium filling of QDs (relatively high temperatures and/or shallow potential wells)

Sommario/riassunto

In this book, leading experts on quantum dot theory and technology provide comprehensive reviews of all aspects of quantum dot systems. The following topics are covered: (1) energy states in quantum dots, including the effects of strain and many-body effects; (2) self-assembly and self-ordering of quantum dots in semiconductor systems; (3) growth, structures, and optical properties of III-nitride quantum dots; (4) quantum dot lasers.
Contents: Low-Dimensional Systems (E Borovitskaya & M S Shur) Energy States in Quantum Dots (A J Williamson) Sel

2. Record Nr. UNINA9910970042703321

Titolo	Hurricane Elena, Gulf Coast, August 29-September 2, 1985 / / prepared by Peter Sparks ... [et al.] for Committee on Natural Disasters, Division of Natural Hazard Mitigation, Commission on Engineering and Technical Systems, National Research Council
Pubbl/distr/stampa	Washington, D.C., : National Academy Press, 1991
ISBN	9786610203918 9781280203916 1280203919 9780309565141 0309565146 9780585154084 0585154082
Edizione	[1st ed.]
Descrizione fisica	1 online resource (135 p.)
Collana	Natural disaster studies ; ; v. 2
Altri autori (Persone)	SparksPeter R
Disciplina	363.3/492
Soggetti	Hurricane Elena, 1985 Hurricanes - Mexico - Gulf Coast Buildings - Natural disaster effects - Mississippi Buildings - Natural disaster effects - Alabama
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references (p. 102-104).
Nota di contenuto	NATURAL DISASTER STUDIES -- Copyright -- NATURAL DISASTER STUDIES -- INVITATION FOR DISCUSSION -- Acknowledgments -- Preface -- Contents -- 1 Executive Summary -- METEOROLOGY -- WARNINGS AND EVACUATION -- INJURIES AND DEATHS -- DAMAGE -- SUMMARY OF FINDINGS AND RECOMMENDATIONS -- Need for In-Depth Study Following Postdisaster Investigation -- Forecasting, Warning, and Evacuation -- Need for Surface Wind-Speed Measurement -- Structural Performance and Building Codes -- 2 Meteorological Aspects -- SYNOPTIC HISTORY -- NEARSHORE AND LANDFALL STORM CHARACTERISTICS -- Wind Speeds -- Tides -- Rainfall -- Tornadoes -- Pressure -- FORECAST GUIDANCE -- STORM SURGE AND THE SLOSH

MODEL -- SLOSH for Hurricane Elena -- 3 Preparedness and Response -- THE WARNING PROCESS -- ELENA AND THE GULF COAST'S RESPONSES -- EVALUATION -- Emergency Response Decision Making -- Multiple Evacuations -- Vacationer Response -- Public Response in the Tampa Bay-to-Sarasota Area -- Use of Regional Hurricane Evacuation Studies -- Evacuation Zones -- Behavioral Analyses -- Clearance Times -- Regional Boundaries -- 4 Wind Damage to Buildings -- WIND DAMAGE IN MISSISSIPPI -- Building Regulations -- Design Wind Speeds and Pressures -- Wind Resistance of Structural Systems -- Load Combinations -- Wind-Load-Resisting Systems -- Workmanship and Materials -- Nonengineered" Structures -- Detailed Damage Descriptions of Classes of Structures -- Schools -- Commercial Structures -- Motels -- Churches -- Single-Family Dwellings -- Multifamily Dwellings -- Mobile Homes -- Metal Building Systems -- Fully Engineered Buildings -- Other Structures -- WIND DAMAGE IN ALABAMA -- Single-Family Dwellings -- Other Structures -- Comparison with Hurricane Frederic -- 5 Conclusions and Recommendations -- POSTDISASTER STUDIES -- 1. Need for In-Depth Postdisaster Studies -- WIND CONDITIONS.
2. Better Wind-Speed Data -- OTHER NATIONAL WEATHER SERVICE ACTIVITIES -- 3. Continued Cooperation between NHC and the Local and National Media -- 4. Use of Amateur Radio and Hurricane Drills -- 5. Need for Improvement of Numerical Forecast Models -- 6. Continued Effective Use of Telephone Hurricane Information Service -- 7. Need for Quick Information Dissemination from SLOSH Runs -- THE EVACUATION PROCESS -- 8. Incorporation of Forecast Uncertainties in Evacuation Planning -- 9. Need for Multiagency Hurricane Evacuation Studies -- 10. Hypothetical Behavioral Assumptions Underlying Evacuation Plans -- 11. Calculation of Clearance Time in Evacuation Studies -- PERFORMANCE OF BUILDINGS AND OTHER STRUCTURES -- 12. Need for Nationally Applicable Wind-Loading Provisions -- 13. Design Needs for Nonengineered Structures -- 14. Need for Design Checks of Professionally Designed Buildings -- 15. Insurance against Wind Damage -- 16. Concern about Industry Standards -- 17. Concern about Using School Buildings as Shelters -- 18. Concern about Preengineered and Masonry-Walled Buildings -- 19. Roof Performance -- 20. Performance of Signs and Building Appurtenances -- References -- Appendix A STRUCTURAL FAILURES IN MISSISSIPPI SCHOOLS -- Appendix B SHOPPING CENTER DAMAGE: A DETAILED ANALYSIS -- Appendix C DAMAGE TO METAL BUILDINGS: A DETAILED ANALYSIS.

Sommario/riassunto

Hurricane Elena, following an erratic and difficult-to-forecast course along an unusually large section of the Gulf Coast, posed special problems from New Orleans, Louisiana, to Sarasota, Florida, well before it came ashore on September 2, 1985. Considerable wind damage occurred in this area to structures that were ostensibly designed to resist such extreme wind conditions. Because similar design conditions and building control procedures exist along other U.S. hurricane-prone coasts, the conclusions drawn in this detailed book catalog the structural damage caused by the hurricane and emergency response actions, establish the wind conditions of the storm, review in-depth the building control process used in the area, and conduct necessary structural and wind tunnel tests relevant to a large number of communities along the coastal areas.