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| Autore | IAkushevich L. V (Liudmila Vladimirovna) |
| Titolo | Nonlinear physics of DNA [[electronic resource] /] / Ludmila V. Yakushevich |
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| ISBN | 1-280-51997-5<br>9786610519972<br>3-527-60370-0<br>3-527-60473-1 |
| Edizione | [2nd ed.] |
| Descrizione fisica | 1 online resource (208 p.) |
| Disciplina | 572.86<br>572.8633 |
| Soggetti | DNA - Structure<br>DNA - Conformation<br>Nonlinear mechanics<br>Biophysics<br>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 (p. [175]-187) and index. |
| Nota di contenuto | Nonlinear Physics of DNA; Contents; Preface to the First Edition; Preface to the Second Edition; Dedication; 1 DNA Structure; 1.1 Chemical Composition and Primary Structure; 1.2 Spatial Geometry and Secondary Structure; 1.3 Forces Stabilizing the Secondary DNA Structure; 1.3.1 Hydrogen Interactions; 1.3.2 Stacking Interactions; 1.3.3 Long-range Intra- and Inter-backbone Forces; 1.3.4 Electrostatic Field of DNA; 1.4 Polymorphism; 1.5 Tertiary Structure; 1.5.1 Superhelicity; 1.5.2 Structural Organization in Cells; 1.6 Approximate Models of DNA Structure; 1.6.1 General Comments<br>1.6.2 Hierarchy of Structural Models1.7 Experimental Methods of Studying DNA Structure; 2 DNA Dynamics; 2.1 General Picture of the DNA Internal Mobility; 2.2 Twisting and Bending Motions; 2.3 Dynamics of the Bases; 2.3.1 Equilibrium State; 2.3.2 Possible Motions of the Bases; 2.4 Dynamics of the Sugar-Phosphate Backbone; 2.4.1 Equilibrium State; 2.4.2 Possible Motions of the Sugar-Phosphate |

Backbone; 2.5 Conformational Transitions; 2.5.1 B-->A Transition; 2.5.2 B-->Z Transition; 2.6 Motions Associated with Local Strands Separation; 2.6.1 Base-pair Opening Due to Rotations of Bases 2.6.2 Transverse Displacements in Strands2.7 Approximate Models of DNA Dynamics; 2.7.1 The Main Principles of Modeling; 2.7.2 Hierarchy of Dynamical Models; 2.8 Experimental Methods for Studying DNA Dynamics; 2.8.1 Raman Scattering; 2.8.2 Neutron Scattering; 2.8.3 Infrared Spectroscopy; 2.8.4 Hydrogen-Deuterium (-Tritium) Exchange; 2.8.5 Microwave Absorption; 2.8.6 NMR; 2.8.7 Charge-transfer Experiments; 2.8.8 Single Molecule Experiments; 3 DNA Function; 3.1 Physical Aspects of DNA Function; 3.2 Intercalation; 3.3 DNA-Protein Recognition; 3.4 Gene Expression; 3.5 Regulation of Gene Expression 3.6 Replication4 Linear Theory of DNA; 4.1 The Main Mathematical Models; 4.1.1 Linear Rod-like Model; 4.1.1.1 Longitudinal and Torsional Dynamics: Discrete Case; 4.1.1.2 Longitudinal and Torsional Dynamics: Continuous Case; 4.1.1.3 Bending Motions; 4.1.2 Linear Double Rod-like Model; 4.1.2.1 Discrete Case; 4.1.2.2 Continuous Case; 4.1.3 Linear Models of Higher Levels; 4.1.3.1 The Third-Level Models; 4.1.3.2 The Fourth-level (Lattice) Models; 4.2 Statistics of Linear Excitations; 4.2.1 Phonons in the Rod-like Model; 4.2.1.1 General Solution of the Model Equations
4.2.1.2 Secondary Quantum Representation4.2.1.3 Correlation Functions; 4.2.2 Phonons in the Double Rod-like Model; 4.2.2.1 General Solution of the Model Equations; 4.2.2.2 Secondary Quantum Representation; 4.2.2.3 Correlation Functions; 4.2.3 Phonons in the Higher-level Models; 4.3 Scattering Problem; 4.3.1 Scattering by 'Frozen' DNA; 4.3.2 Elastic Scattering; 4.3.3 Inelastic Scattering; 4.4 Linear Theory and Experiment; 4.4.1 Fluorescence Depolarization; 4.4.2 Low-frequency Spectra: Neutron Scattering, Infrared scattering, Raman Scattering, Speed of Sound
5 Nonlinear Theory of DNA: Ideal Dynamical Models

Sommario/riassunto

The first edition of this book was the first on the physics of DNA to go beyond the simple (simplified) 'linear' approach, and it has since been found that the inclusion of nonlinear effects leads to a significantly improved interpretation of experimental data. This new edition naturally retains this approach, but has been completely revised, updated and expanded to cover recent developments.Beginning with introductory chapters on DNA structure and dynamics, the book also includes a comparison between linear and nonlinear approaches to the DNA molecule, a chapter devoted to the statistics

2. Record Nr. UNISA996386052203316

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| Autore | Peacham Henry <1576?-1643?> |
| Titolo | Thalia's banquet [[electronic resource] ] : furnished with an hundred and odde dishes of newly deuised epigrammes, whereunto (beside many worthy friends) are inuited all that loue in offensiue mirth, and the Muses. By H.P |
| Pubbl/distr/stampa | London, : Printed by Nicholas Okes, for Francis Constable, dwelling in Paules Church-yard, at the signe of the white Lyon, 1620 |
| Descrizione fisica | [60] p |
| Soggetti | Epigrams, English |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Dedication signed: Henry Peacham.<br>In verse.<br>Signatures: A-C Dâ¶.<br>Running title reads: Epigrams.<br>Reproduction of the original in the Bodleian Library. |
| Sommario/riassunto | eebo-0014 |