

Advanced Mechanical Models of DNA Elasticity

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Advanced Mechanical Models of DNA Elasticity provides thorough coverage on 17 different DNA models. This extensively referenced volume is a categorical account of how these models and the principles of elasticity operate across a wide range of biological functions. The book provides an introduction to the state of the field of DNA mechanics, including known and widely used models with their short analysis, as well as covering experimental methods and data, the influence of electrical, magnetic, ionic conditions on the persistence length, and dynamics with viscosity influence.

This book goes beyond the foundation introduction to address extensive technical detail. Following the initial overview of the field, topics dealt with include the need to understand the nature of the non-linear overstretching transition of DNA under force, why DNA has a negative twist-stretch coupling, and how the novel advanced helicoidal model reflects the direct connection between the molecule helix structure in the context of its specific properties, including nonlinear features and transitions.



ACADEMIC PRESS

An imprint of Elsevier
store.elsevier.com

Fundamental Life Sciences

ISBN 978-0-12-801999-4



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