

328.

Accession number:20113214212606

Title:Modeling DNA response to terahertz radiation

Authors:Swanson, Eric S. (1)

Author affiliation:(1) Department of Physics and Astronomy, University of Pittsburgh, Pittsburgh, PA 15260, United States

Corresponding author:Swanson, E.S.

Source title:Physical Review E - Statistical, Nonlinear, and Soft Matter Physics

Abbreviated source title:Phys. Rev. E Stat. Nonlinear Soft Matter Phys.

Volume:83

Issue:4

Issue date:April 4, 2011

Publication year:2011

Article number:040901

Language:English

ISSN:15393755

E-ISSN:15502376

CODEN:PLEEE8

Document type:Journal article (JA)

Publisher:American Physical Society, One Physics Ellipse, College Park, MD 20740-3844, United States

Abstract:Collective response of DNA to terahertz electric fields is studied in a simple pair bond model. We confirm, with some caveats, a previous observation of destabilizing DNA breather modes and explore the parameter dependence of these modes. It is shown that breather modes are eliminated under reasonable physical conditions and that thermal effects are significant.

Number of references:17