List of publications

A. Articles in refereed journals

1. N. Theodorakopoulos
   Effects of dimensionality upon transport coefficients near the liquid-gas critical point

2. N. Theodorakopoulos
   Nearest neighbor Ising model with added local 4-spin interaction
   Zeitschrift für Physik 254, 399 (1972)

3. N. Theodorakopoulos
   Phase transition of the compressible Ising lattice
   Solid State Communications 12, 955 (1973)

4. W. Hasenfratz, R. Klein and N. Theodorakopoulos
   Light scattering from moving cluster walls in a model of displacive phase transitions
   Solid State Communications 18, 893 (1976)

5. N. Theodorakopoulos and J. Jäckle
   Low frequency Raman scattering by defects in glasses
   Physical Review B 14, 2637 (1976)

6. N. Theodorakopoulos
   Dynamics of non-linear systems: the kink-phonon interaction
   Zeitschrift für Physik B 33, 385 (1979)

7. N. Theodorakopoulos
   On the statistical mechanics of the discrete $\phi^4$ chain
   Journal of Physics A 12, L211 (1979)

8. N. Theodorakopoulos, W. Wunderlich and R. Klein
   Lattice phonons in the presence of non-linear excitations
   Solid State Communications 33, 213 (1979)

9. R. Klein, W. Hasenfratz, N. Theodorakopoulos and W. Wunderlich
   The kink-phonon and the kink-kink interaction in the $\phi^4$ model
   Ferroelectrics 26, 721-724 (1980)

10. N. Theodorakopoulos and R. Klein
    Phonon fluctuations and soliton diffusion in nonlinear Hamiltonian systems
    Physica Status Solidi (a) 61, 107 (1980)
11. N. Theodorakopoulos
   Thermodynamics of a Sine-Gordon breather gas

12. N. Theodorakopoulos and F. G. Mertens
   Dynamics of the Toda lattice: a soliton-phonon phase shift analysis

13. N. Theodorakopoulos
   Finite temperature excitations of the classical Toda chain

14. N. Theodorakopoulos
   Ideal-gas approach to the statistical mechanics of integrable systems

15. P. Perez and N. Theodorakopoulos
   Solitary excitations in the α-helix: viscous and thermal effects

16. P. Perez and N. Theodorakopoulos
   Competing mechanisms for the transport of energy in the α-helix

17. N. Theodorakopoulos and E. W. Weller
   Fluctuation properties of thermal solitons
   Physical Review B 37, 6200 (1988)

18. N. Theodorakopoulos and E. W. Weller
   Low-temperature dynamics of Sine-Gordon solitons

19. N. Theodorakopoulos
   Semiclassical excitation spectrum of an integrable discrete spin chain

20. N. Theodorakopoulos and N. C. Bacalis
   Semiclassical solitons and the S=1/2 Heisenberg model

21. N. Theodorakopoulos and N. C. Bacalis
   Thermal solitons in the Toda chain
   Physical Review B 46, 10706 (1992)

22. N. Theodorakopoulos
   Non-topological thermal solitons in isotropic ferromagnetic lattices

23. V. Constantoudis and N. Theodorakopoulos
   Quantum signatures of chaos in integrable systems
Biomonitoring human exposure to environmental carcinogenic chemicals
Mutagenesis 11, 363 (1996)

25. N. Theodorakopoulos, N.C. Bacalis and Z. Xiong
Thermodynamics of the Ishimori-Haldane-Faddeev ferromagnetic chain: the field-dependent case

26. N. Theodorakopoulos and N.C. Bacalis
Low temperature asymptotics of isotropic ferromagnetic chains at non-zero fields
Physical Review B 55, 52 (1997)

27. N.C. Bacalis, N. Theodorakopoulos and D.A. Papaconstantopoulos
Wavevector-dependent Stoner approach to band ferromagnetism in Ni

28. V. Constantoudis and N. Theodorakopoulos
Nonlinear dynamics of classical Heisenberg chains

29. V. Constantoudis and N. Theodorakopoulos
Lyapunov exponent, stretching numbers and islands of stability of the kicked top

30. N. Theodorakopoulos and M. Peyrard
Solitons and non-dissipative diffusion

31. N. Theodorakopoulos, T. Dauxois and M. Peyrard
Order of the phase transition in models of DNA thermal denaturation
Physical Review Letters 85, 6 (2000); arXiv:cond-mat/0004487

32. T. Dauxois, N. Theodorakopoulos and M. Peyrard
Thermodynamic instabilities in one dimension: correlations, scaling and solitons
Journal of Statistical Physics 107, 869 (2002); arXiv:cond-mat/0105341

33. N. Theodorakopoulos
Thermodynamic instabilities in one dimensional particle lattices: a finite-size scaling approach
34. M. Barbi, S. Lepri, M. Peyrard and N. Theodorakopoulos
Thermal denaturation of a helicoidal DNA model

35. N. Theodorakopoulos, M. Peyrard and R.S. MacKay
Nonlinear structures and thermodynamic instabilities in a one-dimensional lattice system

36. N. Theodorakopoulos
Phase transitions in one dimension: are they all driven by domain walls?
Physica D \textbf{216}, 185 (2006); arXiv:cond-mat/0510437

37. J. Errami, M. Peyrard and N. Theodorakopoulos
Modeling DNA beacons at the mesoscopic scale

38. N. Theodorakopoulos
DNA denaturation bubbles at criticality

On 4-point correlation functions in simple polymer models

40. N. Theodorakopoulos
Melting of genomic DNA: predictive modeling by nonlinear lattice dynamics

41. A. Wildes, N. Theodorakopoulos, J. Valle-Orero, S. Cuesta-López, J-L Garden and M. Peyrard
The thermal denaturation of DNA studied with neutron scattering

42. N. Theodorakopoulos
Bubbles, clusters and denaturation in genomic DNA: modeling, parametrization and efficient computation

43. A. Wildes, N. Theodorakopoulos, J. Valle-Orero, S. Cuesta-López, J-L Garden and M. Peyrard
Structural correlations and melting of B-DNA

44. N. Theodorakopoulos and M. Peyrard
Base pair openings and temperature dependence of DNA flexibility
45. S. Meyer, N. Theodorakopoulos, M. Peyrard, R. Lavery and R. Everaers
Temperature dependence of the DNA Double Helix at the Nanoscale: Structure, Elasticity, and Fluctuations
Biophysical Journal 105, 1904 (2013)

46. J. Valle-Orero, A. Wildes, N. Theodorakopoulos, S. Cuesta-López, J-L Garden, S. Danilkin and M. Peyrard
Thermal denaturation of A-DNA
New Journal of Physics 16, 113017 (2014)

47. K Wood, R. Knott, O. Tonchev, D. Angelov, N. Theodorakopoulos and M. Peyrard
Small angle scattering as a tool to study the thermal denaturation of DNA

B. Book chapters and refereed conference proceedings

1. N. Theodorakopoulos, S. Hanna and R. Klein
Behavior of a \(\phi^4\) kink in the presence of an inhomogeneous perturbation

2. N. Theodorakopoulos
Dynamics of the Sine-Gordon chain: the kink-phonon interaction, soliton diffusion and dynamical correlations

3. N. Theodorakopoulos and R. Klein
Inherent effects of discretization in an interacting kink-phonon system
in Physics in one dimension, J. Bernasconi and T. Schneider (Eds.), pp. 100-103, Springer (1981)

4. N. Theodorakopoulos
Counting solitons and phonons in the Toda lattice

5. N. Theodorakopoulos
Classical statistical mechanics of integrable systems

6. N. Theodorakopoulos
Solitons: Dynamics, Statistics and the Bethe Ansatz
7. N. Theodorakopoulos and N. C. Bacalis
Thermally excited lattice solitons

8. N. Theodorakopoulos
The statistical properties of lattice solitons
in Nonlinear coherent structures in Physics and Biology (Eds. K. Spatschek and F.G. Mertens), pp. 73-83, Plenum (1994)

9. N. Theodorakopoulos
Phase transitions in homogeneous biopolymers: basic concepts and methods
in Localization and energy transfer in nonlinear systems, L. Vazquez, R.S. MacKay and M.P. Zorzano (Eds.), pp. 130-152, World Scientific (2003); [arXiv:cond-mat/0210188]

10. N. Theodorakopoulos, M. Peyrard and T. Dauxois
Critical dynamics of DNA denaturation

11. N. Theodorakopoulos
Statistical physics of localized vibrations

12. N. Theodorakopoulos
Minimal modeling of DNA thermal and mechanical instabilities
Proceedings of a workshop on Mathematical Methods and Models of Continuum Biomechanics
Oberwolfach Reports (European Mathematical Society) 2, pp. 523-526 (2005).

C. Doctoral Dissertation

1. N. Theodorakopoulos
Molecular relaxation and critical dynamics
Brown University 1971; thesis adviser: Leo Kadanoff; Digital Dissertations publication [AAT 7302342]
D. Lecture Notes

1. N. Theodorakopoulos
   Selected topics in theoretical biophysics
   University of Konstanz 2001, pp. 1-56

2. N. Theodorakopoulos
   Nonlinear Physics: Solitons, Chaos, Discrete Breathers
   University of Konstanz 2006, pp. 1-174

3. N. Theodorakopoulos
   Die statistische Physik des DNA-Schmelzens
   slightly adapted version of an inaugural lecture at the University of
   Konstanz, 2003 (in German) pp. 1-14

E. Miscellaneous

1. N. Theodorakopoulos
   R&D spending, extroversion and optimization of academic & research
   institutions
   Symposium on research and technology, Association of Greek Re-
   searchers, Athens, 2005 (in Greek) pp. 1-3

2. N. Theodorakopoulos and M. Peyrard
   Optimization of parameters in the Peyrard-Bishop-Dauxois model of
   DNA melting: a preliminary report
   *HPC-Europa2, Pan-European Research Infrastructure on High Per-