NONEXTENSIVE STATISTICAL MECHANICS
AND THERMODYNAMICS: BIBLIOGRAPHY *

April 1, 2019

GENERAL THEORY

Generalized entropy and thermostatistics: [1]
Connection to thermodynamics, ensembles and Jaynes’ information theory: [2–1843]
H-theorem and irreversibility: [1844–1879]
Ehrenfest theorem, von Neumann equation: [3, 1880–1886]
Quantum statistics: [1887–1996]
Variational and perturbative methods; Bogolyubov inequality; Green functions; Path integral; Boltzmann equation: [1900, 1997–2091]
Langevin and Fokker-Planck equations: [1848–1891, 2070–2508]
Fluctuation-dissipation, Nyquist and Onsager reciprocity theorems, Kubo’s linear response theory and Kramers-Kronig relation: [6, 2509–2526]
Poisson equation: [2527–2536]
Callen identity: [2537]
Ising transmissivity: [2538]
Classical equipartition principle: [2539–2541]
Connection with quantum uncertainty: [2542–2581]
Connection with Fisher information measure: [2582–2594]
Connection with ergodicity, nonlinear dynamical systems, self-organized criticality, cellular automata, fractals: [9, 52–60, 1967, 2595–2996]
Connection with general relativity, cosmology, dark energy, string theory: [2583, 2997–3098]
Connection with quantum groups and quantum mechanics: [3099–3143]
Connection with wavelets; Signal processing; EEG: [3144–3224]
Connection with quantum correlated many-body problems: [3225–3235]
Connection with the Gentile and the exclusion Haldane statistics: [3236–3239]
Connection with finite systems: [2509, 3236]
Rigorous results (generalized entropy and thermostatistics): [2598–2603, 3240–3245]
Integral transformations (Hilhorst and Prato formulæ): [1889, 2509, 3246–3249]

ONE-BODY SYSTEMS

Two-level system: [1, 3250]
Harmonic and anharmonic oscillators: [954–964, 3244–3252]
Free particle: [3253]
Larmor precession: [1882]
Rigid rotator: [3248–3256]
Hydrogen and hydrogen-like atoms: [1132–1139, 3257–3283]

*This regularly updated Bibliography (at http://tsallis.cat.cbpf.br/biblio.htm) contains 7150 articles from 13670 signing (co)authors. It does not address the vast existing literature addressing nonextensive thermodynamical anomalies, but only articles including at least one substantial relation with nonadditive entropies, nonextensive statistical mechanics and thermodynamics. It is a fairly complete listing whose indexation is, however, only indicative.
MANY-BODY SYSTEMS

Ideal, classical gases, and other toy models: [2509–2539, 3246–3309]
Independent spin paramagnet, Landau magnetism: [3104–3110, 3310–3317]
Black-body radiation and photonic systems: [3318–3371]
\[ d = 1 \] Ising ferromagnet: [3372–3376]
\[ d \geq 2 \] Ising and other ferromagnets: [2538, 3377–3419]
Infinite-range Ising ferromagnet: [3420]
Potts ferromagnet, Molecular field approximation: [2537, 3394–3424]
Percolation: [3425–3427]
Electron-phonon systems; tight-binding-like Hamiltonians; nanosystems; theoretical chemistry: [3428–3483]

APPLICATIONS

Self-gravitating systems, Stellar polytropes, Vlasov equation, Galaxies, Galaxy clusters: [2052, 2527, 2583, 3484–3624]
Lévy-like and correlated anomalous diffusion: [17, 2155, 2156, 2209–2244, 3625–3688]
Turbulence; Granular matter; Viscous fingering; Navier-Stokes equation; Boltzmann equation; Mossbauer effect: [2527, 3670–3687, 3689–3943]
Solar neutrinos; High energy physics: [3944–4428]
Ferrofluid-like materials, Lennard-Jones and other fluids: [3411, 4429–4451]
Solitons: [4452, 4453]
Plasma (electron velocity distribution, magnetohydrodynamics): [4454–4875]
Glass, Spin-glass: [4876–4908]
Superfluid helium; Bose-Einstein condensation: [4909–4928]
Test of Boltzmann-Gibbs thermostatistics: [3001, 3341, 3342]
Cosmic rays; Elementary particles: [4396, 4929–5148]
Biological systems; Microemulsions; Liquid crystals: [5149–5250]
Stochastic resonance; Brownian motors: [5251–5288]
Connection with the Theory of perceptions: [17, 18]
Connection with the Theory of finances: [6, 3690, 5272–5463]
Consistent testing; Statistical inference; Theory of probabilities: [535–577, 2048, 5465–5522]
Theory of functions; Geometric approaches: [1210, 1213–1342, 4578, 5523–5743]
Simulated annealing and optimization techniques; Monte Carlo (Genetics, Traveling salesman problem, Data fitting curves, Quantum chemistry, Gravity models, Lennard-Jones clusters, Thomson model, spin systems, proteins, nucleic acids): [2071, 3405, 5744–6063]
Neural and other networks: [5215, 5216, 6064–6171]
Analysis of time series (nonlinear dynamics, epilepsy, earthquakes, economics) and images: [3144–3168, 6172–6714]
Geophysics: [3167, 3168, 6245, 6715–6784]
Medicine; Tomography: [3169–3176, 6172, 6451, 6785–6839]
Symbolic dynamics, linguistics, philology, cognitive sciences, hydrology, ecology: [2641–2688, 5692, 6840–6989]

GENERAL READING

Generalized thermostatistics; Generalized distributions: [482, 6990–7150]
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