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NOISE CONTROL FOR A BETTER ENVIRONMENT

Entropy For Nonlinear Coupled Mechanical Resonators

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ABSTRACT

Thermodynamic temperature of Hamiltonian's systems, defined by adopting the concept of Khinchin's entropy, is a quantity controlling the energy flow between mechanical resonators. The concepts of entropy and thermodynamic temperature allow the second principle of thermodynamics to support the energy balance equations, the first principle, offering a more complete theory of the exchange of energy between oscillators. This paper studies how energy is shared between strongly coupled nonlinear systems and it approaches the problem by determining the temperature of each system. The results are presented by analytical relationships. A computational technique is adopted to verify the quality and the limits of the analytical result.