Mathematical Physics

Comparison of Thermodynamic Characteristics in Quantum and Classical Approaches and Game Theory

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We fix the temperature T and consider mean energy and entropy as two players of a game. As a result, basic formulas for the quantum mean energy and the quantum entropy are derived. We compare also the quantum and classical approaches without a demand for Plank constant h to be small. Important inequalities for statistical sum, quantum energy, quantum entropy, and their classical analogs follow.

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