



CCQCN

CRETE CENTER FOR
QUANTUM COMPLEXITY
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ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ & ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ/
CCQCN SEMINAR

Tuesday, 08 April 2014

11:00-12:00

3rd Floor Seminar Room

Clausius versus Boltzmann-Gibbs entropies

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Abstract

We discuss the equivalence between the phenomenological Clausius entropy S and its Boltzmann-Gibbs statistical formulation $S_{BG} \sim \ln(\text{Density of States})$. For our purpose we study the simple case of a gas comprised of noninteracting molecules with constant thermal capacity confined in a finite heat bath and derive the necessary thermodynamic equations. We show then, that the former deviate from the respective ones obtained within the statistical canonical ensemble. The probabilistic origin of the observed deviations is detected, leading to the possibility of revisiting the relation between S and S_{BG} .

