
Hardy—Ramanujan formula and thermodynamics of quantum string

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For partitions of natural numbers, there is an asymptotic formula of the Hardy-Ramanujan. In this paper we propose to compare this formula with the number of microstates, using entropy calculation of the quantum string by means of Euler–Maclaurin formula. The work briefly touches upon a different approach, using counting the number of states through the inverse Laplace transformation of the partition function.

Keywords: *partition of the number, the generating function, Hardy–Ramanujan formula, quantum string, partition function, free energy, entropy, Euler–Maclaurin formula.*

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