
Tutorial – The physics of information: from Maxwell’s demon to Landauer

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Abstract

We will discuss the intimate connection existing between information theory and thermodynamics following its historical development. We will focus on two complementary aspects: 1) the gain of information which we will illustrate with Maxwell’s famous demon and 2) the erasure of information summarized by Landauer’s principle. We will additionally present a number of single-particle experiments that have for the first time realized the above gedanken experiments in the lab. We will finally summarize recent theoretical developments.

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