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NANOSCIENCE COLLOQUIUM

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The Maxwell Demon: A Personal View

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Information can be used to extract energy from a single thermal bath, in apparent contradiction with the Second Law of Thermodynamics. This observation was first pointed out by Maxwell in 1867 with the introduction of his celebrated demon. Since then, the demon has inspired much research on the relationship between information and entropy, most of it focused on the thermodynamic cost of the acquisition and processing of information. In the last years, new tools for the study of the energetics of small fluctuating systems –the so-called fluctuation theorems– have provided a better understanding of the thermodynamics of information. In this seminar, I will review part of the history of the Maxwell demon, with special emphasis on these recent results, trying to give some clues to the fundamental question: what is information?

Hosts: Heiner Linke, Jonas Johansson (FTF)

This is one in a series of Nanoscience Colloquia, aimed at researchers and students with an interest in nanoscience. They will cover different areas of nanoscience, and are given a couple of times per semester. The series is arranged by the Strategic Research Environment “The Nanometer Structure Consortium at Lund University”, “nmC@LU”, and part of the Linnaeus grant “Nanoscience and Quantum Engineering”, funded by the Swedish Research Council (VR).



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