

ASC Sonderkolloquium

(besonders empfohlen für Studierende, die in diesem Semester die P2- oder T4-Vorlesungen besuchen)

Dienstag, den 31. Mai 2005

17:15,
Grosser Physikhörsaal, Geschw.-Scholl-Platz

Prof. Vinay Ambegaokar
Laboratory of Atomic and Solid State Physics
Cornell University, Ithaca NY

Entropy and Time

The emergence of a direction of time in statistical mechanics from an underlying motion-reversal-invariant dynamics will be discussed in a tutorial way. The 'dog-flea' model of P. and T. Ehrenfest, generalized to finite temperature, will be used to illustrate the main points. The manner in which time-reversal symmetry is preserved and the role of initial conditions will be emphasized. The transformation of the principle of no decrease of entropy for an isolated system to the principle of no increase of free energy for a system at fixed temperature will be simply demonstrated.

Ref. V. A. and A. Clerk, Am. J. Phys 67, 1068 (1999)
V. A., "Reasoning about Luck: Probability and its Uses in Physics"
(Cambridge University Press, 1996).