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FIZIKAI INTÉZET
és az
ATOMKI
közös
SZEMINÁRIUMA

FEDERICO VÁZQUEZ
(BME, Fizika Tanszék)

**Aspects of irreversible thermodynamics of transport phenomena
in small systems**

címmel előadást tart

2009. május 28-án,
csütörtökön
11:00 órakor

az
E7-es szemináriumi teremben
(Bem tér 18/B., I. emelet jobbra)

Abstract:

The study of transport phenomena in small systems have become a nowadays topic of theoretical and experimental research because of the applications to the manufacturing of nano-structured materials. Small systems depart from the bulk behavior in many aspects. First, fluctuations have an important role in the behavior of small systems and they provide key information for the transport and dissipation mechanisms analysis. Second, changes in the system occur in the time scale of the relaxation of physical properties which may be at micro-seconds scale or less. This brings out that memory effects have to be considered in the transport models. Third, the reduced dimensions of small systems imply that walls affect the behavior of the system introducing non-local effects. Last, discrete nature of matter acquires a role and quantum effects may appear in the transport of heat, matter and energy. In the talk the mentioned topics will be developed in some extent from the theoretical point of view of thermodynamics of irreversible processes.