



Ben-Gurion University of the Negev  
Blaustein Institutes for Desert Research

The Swiss Institute for Dryland Environmental and Energy Research  
Alexandre Yersin Department of Solar Energy and Environmental Physics

Title:

## **Forces in nonequilibrium systems**

Speaker:

Prof. Yariv Kafri  
Physics Department  
Technion

Abstract:

Pressure is the mechanical force per unit area that a confined system exerts on its container. In thermal equilibrium, the pressure depends only on bulk properties (density, temperature, etc.) through an equation of state. The talk will show that in non-equilibrium active systems containing self-propelled particles, the pressure instead can depend on the precise interactions between the system's contents and its confining walls and on the shape of the walls. This implies that generic active systems have no equation of state. Implications of this result, as well as results on forces exerted on general objects embedded in active fluids, will be discussed.

Tuesday, May 16, 2017, 11:00  
Lecture room, Physics Building (ground floor)