

סמינר מיוחד
יום רביעי 25.05.2011 בשעה 11:30

הסמינר יתקיים בחדר 235 בנין 59

Prof. Tom Witten

James Franck Institute, University of Chicago

The fadeout profile in a drying liquid drop: control by a distant singularity

When a dirty drop of liquid dries, the non-volatile solute is typically driven to the contact line by capillary flow. This flow is in turn controlled by the mechanics of that solute. The result of this interplay between solute-mediated forces and capillary flow leads to robust patterns at length scales far from the solute particle size or the drop size. This talk surveys the variety of patterns that are seen and the novelty of the unexplained patterns that result. It then describes a novel mechanism for one simple and common feature: the robust fadeout profile of the deposit as one moves away from the contact line. We argue that this profile has a power-law form dictated by the stagnation flow in the middle of the drop, far from the deposition point. This mechanism shows that capillary deposition phenomena expand our notions of how spontaneous spatial self-organization can occur.