

Colloquium Notice

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Surface relaxation below the roughening temperature: steps, PDE, and self-similarity

Crystalline films are often grown or annealed below their roughening temperature. The microscopic physics involves the attachment and detachment of atoms at steps, and the diffusion of atoms across terraces. The macroscopic consequences of these atomic-scale mechanisms are still poorly understood. My talk will discuss recent progress with Hala Al Hajj Shehadeh and Jonathan Weare, concerning the evolution of a one-dimensional step-train separating two facets in the "attachment-detachment-limited" regime. I'll explain why the evolution is asymptotically self-similar, and why its continuum limit is associated with certain fourth-order nonlinear PDE's. The talk will be self-contained, requiring no prior background about crystal growth.

Monday

February 7, 2011

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326