Department of Mathematics and Statistics Colloquium

Statistical mechanics and hydrodynamic limit of solid on solid models in crystalline materials

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Abstract: I will illustrate the use of statistical methods to calculate the thermodynamic and structural properties of clean, flat crystal surfaces. The appearance of facets during the growth of crystals reflects the emergence of long range order from atomistic scale interactions, whereas in continuum models facets arise from cusps in the surface free energy. We will explore the connection between these two descriptions by considering the hydrodynamic limit of a radially symmetric evaporation/condensation model. The mathematical structure is very rich and I will go over interesting open questions.

Monday, April 18 at 3:45 in Roop 103

refreshments at 3:30