Recent Progress in Growth Processes

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102 Bradley Hall, 4:00 pm

(Tea 3:30 pm Math Lounge)

Abstract

Growth processes have an extensive history both in the probability literature and the physics literature. A basic problem is to describe the growth of an interface when the underlying dynamics have both deterministic and stochastic components. The existence of a limiting shape of this interface for a variety of models has been known for some time. Given this a natural question is to describe the fluctuations about the limiting shape.

Recently it has been discovered that the distribution functions describing these fluctuations are precisely those arising in random matrix theory. Indeed, the techniques of random matrix theory are crucial for the solution of this problem.

These developments will be summarized in this colloquium.

This talk should be accessible to graduate students.   985111065