Stanford University
Departments of Mathematics and Statistics

PROBABILITY SEMINAR

4:30pm, Monday, January 23, 2017
Sequoia Hall Room 200
Cookies served at 4pm, 1st floor Lounge.

Speaker: Vladas Sidoravicius, NYU and CEMADEN

Title: Dendrite growth and multi-particle diffusion limited aggregation

Abstract:
In this work we consider one of the classical aggregation processes, introduced in 1979, with the goal of providing an example of “a simple and tractable” mathematical model of dendritic growth, for which theoretical and mathematical concepts and tools could be designed and tested on. This model gave rise to the DLA growth model. Almost four decades later we still encounter tremendous mathematical challenges studying its geometric and dynamic properties, and understanding the driving mechanism lying behind the formation of fractal-like structures. We show the existing phase transition for the speed of growth, discuss how it affects shapes and state several conjectures relating DLA and KPZ (Kardar–Parisi–Zhang) growth models.