ATHENS *Pr*OBABILITY COLLOQUIUM

Saturday April 6, 2019

Math Dept, University of Athens

"Random planar geometry"

Jason Miller

Abstract:

In the last several decades, there have been enormous breakthroughs in understanding random geometric phenomena in two dimensions. Much of this has been made possible due to the invention of the Schramm-Loewner evolution (SLE) by Oded Schramm in 1999. SLE is a random, fractal curve which turns out to describe the large-scale behavior of the geometric structures which arise in many two-dimensional models from statistical mechanics (e.g., percolation, loop-erased random walk, the uniform spanning tree). Techniques based on SLE have allowed mathematicians to verify a number of predictions made by physicists using very different methods on the behavior of these models. In this talk, I will give an overview of these models, SLE, as well as recent efforts aimed at making the techniques of the physicists mathematically rigorous.

APrOC 2019