
ATHENS *P*ROBABILITY COLLOQUIUM

Saturday May 31, 2014
Math Dept, University of Athens

“Directed polymer and percolation models”

Timo Seppäläinen

Abstract: The limiting shapes of percolation models and limiting free energies of polymer models are basic applications of subadditive ergodic theory. A long-standing challenge has been to find descriptions of these limits. This talk describes two types of variational formulas for directed last-passage percolation and directed polymer models. One kind of variational formula maximizes over measures, another type minimizes over stationary cocycles. For explicitly solvable models on the planar lattice, such as the corner growth model with exponential weights and the log-gamma polymer, the cocycles that solve the variational formula arise as Busemann functions which are limits of gradients of free energy. These cocycles can also be used to derive Kardar-Parisi-Zhang class fluctuation exponents for the explicitly solvable models.

A yellow rectangular box with a blue border containing the text "APrOC 2014" in red, bold, sans-serif font.

APrOC 2014
