THE CRITICAL POINTS OF LATTICE TREES AND LATTICE ANIMALS IN HIGH DIMENSIONS

YURI MEJIA MIRANDA

Lattice trees and lattice animals are used to model branched polymers. They are of interest in combinatorics and in the study of critical phenomena in statistical mechanics. A lattice animal is a connected subgraph of the d-dimensional integer lattice. Lattice trees are lattice animals without cycles. We consider the number of lattice trees and animals with n bonds that contain the origin and form the corresponding generating functions. We are mainly interested in the radii of convergence of these functions, which are the critical points. In this talk we focus on the calculation of the first three terms of the critical points for both models as the dimension goes to infinity.

This is ongoing work with Gordon Slade.