ARJUN KRISHNAN, University of Rochester
Field induced phase transition in the polymer model

In three spatial dimensions or higher, it is a classical fact that the directed polymer model has two phases: Brownian behavior at high temperature, and non-Brownian behavior at low temperature. We consider the response of the polymer to an external field or tilt, and show that at fixed temperature, the polymer has Brownian behavior for some fields and non-Brownian behavior for others. In other words, the external field can induce the phase transition in the polymer model.