Mathematics, Statistics, and Computer Science **@ UIC**

Combinatorics and Probability Seminar

Stochastic Analysis in the Parisi Formula for Spin Glass Models

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Abstract: The Parisi formula is the most fundamental result in spin glass theory. In this talk we will present a new approach to the proof of Guerra's identity, from which the upper bound in the Parisi formula follows immediately. Among the techniques from stochastic analysis we will use include integration parts for Brownian motion, the Girsanov transform, and backward stochastic differential equations. We hope that this approach will shed some lights on the much more difficult lower bound in the Parisi formula. The basic ideas of this new approach will be outlined the first, and then some details of the proof will be discussed if time permits.

Monday, November 25 at 3:00 PM in 612 SEO