SEMINARIO DI FINANZA QUANTITATIVA

mercoledì 30 maggio 2018
ore 14:00

Scuola Normale Superiore
Pisa
Aula Mancini

Jacopo Rocchi
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terrà un seminario dal titolo:

"Self-sustained clusters in spin glass models"

Abstract:
While macroscopic properties of spin glasses have been thoroughly investigated, their manifestation in the corresponding microscopic configurations is much less understood. To identify the emerging microscopic structures with macroscopic phases at different temperatures, we introduce the concept of self-sustained clusters (SSC). SSC are regions of the space where in-cluster induced fields dominate over the field induced by out-cluster spins. We study their properties in the Ising p-spin model with p=3 using replicas. The intuition gained using fully connected models is then used in the study of models defined on random graphs. A message-passing algorithm is developed to determine the probability of individual spins to belong to SSC. Results for specific instances, which compare the predicted SSC associations with the dynamical properties of the spins, are obtained from numerical simulations. This insight gives rise to a way to predict individual spin dynamics from a single snapshot of spin configurations.

Tutti gli interessati sono invitati a partecipare.

Classe di Scienze