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Università di Roma Tor Vergata
Dipartimento di Fisica



Seminar

Wednesday, 8 July 2015 - h. 15:00

Sala Struttura della Materia (Dipartimento di Fisica)

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“The introduction of spatially correlated magnetic fields in spin models”

Abstract

An essential feature of spin models and their corresponding simulations is the opportunity to introduce an interaction of the spins with a magnetic field. This gives the possibility of discussion over the nature of the magnetic field. It may be a global uniform magnetic field, which simply gives a preferred direction to the system. Or it may be a random local field in each site, which causes disorder to the system.

In this seminar we will make an introduction of a new idea which considers magnetic fields, characterized by a spatial correlation. Under this framework we will let the spins interact only locally with the magnetic field, while canceling their in between interactions, and impose spatial correlations to the magnetic field of an equivalent Ising system.

The results will be divided into two cases. The first where the spins of the system are at zero temperature, where we shall recover the Ising – like behavior of the system. The second where the spins of the system are at finite temperature, which will give a slightly different behavior compared to the Ising – like system.

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