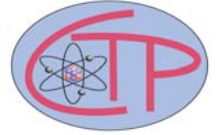




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Center for Theoretical Physics



Ordered vs. Disordered States of the Random-field Model in Three Dimensions

Presented by:

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Thursday, September 24 at 12:00 PM
Namm, Room 823

Abstract

Talk reports on recent numerical investigation of the glassy behavior of random-field exchange models in three dimensions. Correlation of energy with the magnetization for different numbers of spin components has been studied. There is a profound difference between the models with two and three spin components with respect to the stability of the magnetized state due to the different kinds of singularities: vortex loops and hedgehogs, respectively. Memory effects pertinent to such states have been investigated. Insight into the mechanism of the large-scale disordering is provided by numerically implementing the Imry-Ma argument in which the spins follow the random field averaged over correlated volumes. Thermal stability of the magnetized states is investigated by the Monte Carlo method.

Light refreshments will be served.