

CORE-CM SEMINAR
Michigan State University

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Universal dynamics near continuous phase transitions

In this talk I will present an overview of recent developments in understanding slow dynamics of systems (both classical and quantum) near continuous phase transitions. I will briefly discuss how initial ideas based on the Kibble-Zurek mechanism could be combined with the scaling theory of continuous phase transitions. Then I will discuss several implications of these ideas such as accurate determination of critical exponents from numerical simulations, designing optimal annealing protocols and extension of these ideas to imaginary time dynamics amenable to quantum Monte-Carlo simulations. I will also discuss extension of these ideas to the setups, where the parameter driving the system through the transition is a dynamical degree of freedom itself. In this case there is a well defined dynamical self-trapping transition where this parameter can localize near the critical point.

Thursday, Oct. 8, 2015

12:00 NOON

Room 1400 – Biomedical & Physical Sciences

Professor Phil Duxbury - Host