



School of Physical Sciences
Jawaharlal Nehru University, New Delhi

Quantum Aspects of Systems with Many Degrees of Freedom

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Date: March 20–23, 2017
Time: 17:30 hrs (5:30 pm)
Venue: Seminar Room, First Floor, SPS, JNU

This set of lectures, aimed at students, will focus on a few systems with many degrees of freedom: Fermions (the role of statistics, effect of magnetic field, Hall effect, degeneracy and strong correlations), Bosons (BEC, superfluidity, symmetry breaking), Magnets (ferro- and antiferromagnets, spin-waves, magnons) and Phase transitions (classical and quantum, Ising model in a transverse field).

While the material may be familiar, the presentation will hopefully be sufficiently different from the standard curriculum. As for the prerequisite, knowledge of quantum mechanics, in particular of free particles and harmonic oscillators will be assumed. However, background in field theory or statistical mechanics beyond a very few basic facts will not be necessary.