



INSTITUTE SEMINAR

12 January 2015

4:00 p.m.

Fermion

Speaker:

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Title:

Are there fundamental theories in low energy physics?

Abstract:

Lev Landau once said, "Science consists of more than measurements." Landau's intention can be summarised very well as follows. One ought to understand the physics behind the experimental measurements to a certain desired depth. On this background I propose in this talk to discuss some fundamental theories in the realm of low energy physics, which every student of physics would like to be aware of. Those theories are both in the phenomenological and microscopic in contents. My list will include among others-theory of continuous phase transition, Ginzburg-Landau theory, Landau theory of Fermi liquids and theory of superfluidity in bosonic systems. For many practitioners of these theories who attempt to analyse experiments or compute some properties of materials, I shall highlight some crucial issues and challenges in our understanding of experimental phenomena at a pedagogical level. I shall present a general perspective of how the fundamental understanding of low energy physics has emerged during the past seven decades.
