THE CHINESE UNIVERSITY OF HONG KONG
Department of Physics
SEMINAR

Quantum and Holographic Aspects of Spacetime Anisotropy

by

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Time: 1:30 – 2:15 p.m.
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ALL INTERESTED ARE WELCOME
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Abstract

Anisotropy of space-time may be described in terms of a critical exponent that characterizes how space and time may scale differently under a scaling transformation. Such a scaling transformation is called a Lifshitz scale transformation. A system that is invariant under a Lifshitz scaling transformation is called Lifshitz scale invariant. A prominent example is the critical liquid Helium.

We will discuss the entropic properties of Lifshitz field theory (LFT), both from field theory and from holography. We will also present a new proposal for the holographic dual of boundary Lifshitz field theory (BLFT). Finally, we discuss how the anisotropy of space-time affects quantum mechanics. In particular, we show how an anisotropic Josephson Junction may be enhanced in its working by the anisotropy of the insulating junction layer.

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