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# KMI - Theory Seminar

Thursday, June 27, 2013

3:00 pm, KMI Science Symposia (ES-635)

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## “Diffeomorphism Invariance and Non-relativistic Holography”

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### Abstract:

We'll discuss the role of diffeomorphism invariance in quantum field theories. In particular, we review that non-relativistic diffeomorphisms are symmetries of a large class of non-relativistic quantum field theories, including the quantum Hall states and the unitary Fermi gas. Based on these symmetries, we argue that generic many-body quantum mechanical systems have a dual holographic description in terms of a modified theory of gravity known as Horava gravity. Explicit examples of this duality embedded in string theory are constructed by starting with relativistic dual pairs and taking a non-relativistic scaling limit.