PHYSICS AND ASTRONOMY
SEMINAR

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"Of Wilson Lines and Geodesics: Towards Entanglement Entropy in Higher Spin Gravity"

Abstract

The proposal of Ryu and Takayanagi that the entanglement entropy of a region in a field theory is related to the area of a minimal surface in its holographic gravity dual makes a direct connection between entanglement and geometry. I will first present a reformulation of their prescription in the language of the Chern-Simons formulation of 3d Einstein gravity. This observable has a natural generalization to higher spin theories of gravity in 3d: in such theories the entanglement entropy of the dual field theory should remain well-defined, but conventional notions of bulk "geometry" are no longer gauge-invariant and require altering. I will present some partial results on this new higher-spin observable and discuss its relation to entanglement entropy in the dual field theory.

Thursday, April 04, 2013
3:30 p.m.
Clearihue Building
Room A207