THURSDAY
January 9
11:15 AM

Physics Building
Weissman Auditorium

11:00: Coffee, Tea and more

Gravity, entanglement, and bit threads

Matthew Headrick | Brandeis University

In trying to understand quantum gravity at a fundamental level, one of the most confusing questions is where the degrees of freedom are. So-called holographic dualities help with this question, by showing that certain quantum gravity theories are equivalent to conventional quantum field theories, in which we understand in principle where the degrees of freedom are and how they interact. Using such dualities, a new way of understanding entanglement in quantum gravity, involving so-called “bit threads”, has recently been developed. From this point of view, space becomes a channel for carrying entanglement of fundamental degrees of freedom. We will explain what holographic dualities are, what bit threads are, and what they might tell us about the nature of space in quantum gravity.

Coordinator & Accessibility Issues
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