



清华大学高等研究院

Institute for Advanced Study, Tsinghua University

学术报告

Title: Entanglement, causality and energy conditions in QFTs

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Time: 4:00pm, Wednesday, Jan. 3, 2018

Venue: Conference Hall 322, Science Building, Tsinghua University

Abstract

It has become increasingly clear that entanglement is the key to understand many fundamental questions in quantum field theories (QFTs), such as topological order and holography. In this talk, I will discuss some of our recent progresses in proving the quantum energy conditions in QFTs. These are conjectured constraints on energy densities in QFTs that have been difficult to prove using conventional methods. We demonstrate that by probing the entanglement structure of general QFTs, one can construct powerful proofs of the energy conditions. Along the way one also discovers deep connections to quantum information and causality.