



# 清华大学高等研究院

Institute for Advanced Study, Tsinghua University

## 学术报告

**Title:** Quantum entanglement as a probe of hidden physics

**Speaker:** Vijay Balasubramanian  
(*University of Pennsylvania*)

**Time:** 11:00am, Thursday, May 23, 2019

**Venue:** Conference Hall 322, Science Building, Tsinghua University

### Abstract

A basic challenge facing the construction of fundamental theories of physics is that we have only have experimental access to coarse, low-energy probes. However, low-energy particles interact with high-energy degrees of freedom, and thus must be quantum mechanically entangled with them. In this talk I will suggest that we can use this entanglement between energy scales as a novel probe of high energy physics. In some scenarios in string theory, the consequence of this entanglement will be that low-energy observers will measure coupling constants of nature that appear to statistically variable.