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University of Miami, Physics Department Colloquium

Date: Wednesday, Oct 15, 2025
Time: 4:00 pm – 5:00 pm
Location: Physics Library – Rm 335, Knight Physics Building

A Hologram for Quantum Gravity

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Abstract

One of the current goals in theoretical physics is to formulate a theory that simultaneously explains the four fundamental forces of nature, which requires a quantization of the gravitational field. There are many approaches to constructing such a quantum theory of gravity. In this talk I will introduce one such approach known as "celestial holography" which exploits symmetries in an effort to constrain aspects of a theory of quantum gravity in four dimensions. I will discuss the goals of this program and the significant progress made in the last decade. I will conclude by proposing some experimental and phenomenological connections we are currently focusing on.

Biography

Dr. Sruthi Narayanan attended Massachusetts Institute of Technology and graduated with a B.S in Mathematics and Physics in 2016. She then attended Harvard University where she worked with Dr. Andrew Strominger on aspects of quantum gravity and conformal field theory and received her Ph.D. in Physics in 2023. She is currently a postdoctoral research fellow at the Perimeter Institute for Theoretical Physics in Waterloo, where she works to make connections to collider physics and experimental signatures of quantum gravity.