

Thursday, September 2nd, 2021

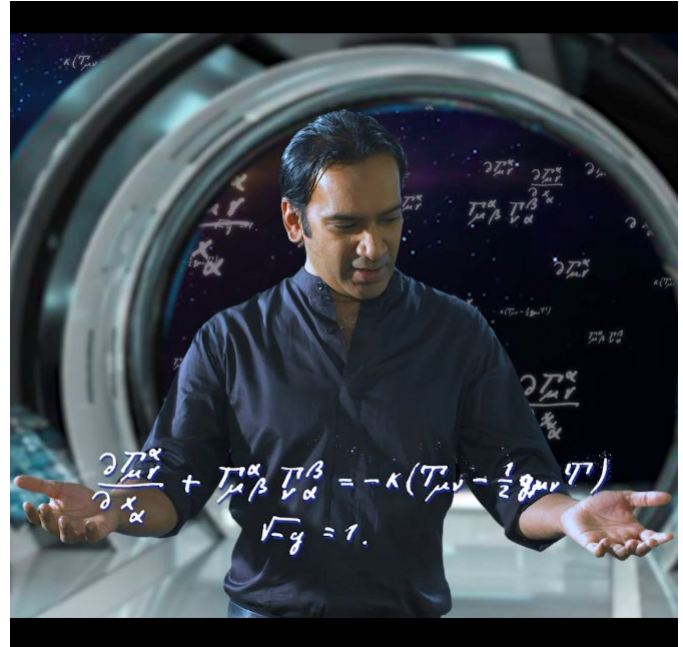
4:00 PM – 5:00 PM, Virtual

<https://asu.zoom.us/j/86960690591>

## The Noise of Gravitons

**Professor Maulik Parikh**

Arizona State University Department  
of Physics



### Abstract:

Gravity is usually regarded classically, obeying Newton's law or Einstein's equations. Here I will show that, when the gravitational field is treated quantum-mechanically, the classical trajectories of falling objects are subject to random fluctuations (or "noise"). Intuitively, the fluctuations can be viewed as arising due to the bombardment of the falling object by gravitons. This fundamental noise might be observable at gravitational wave detectors and, if detected, would provide experimental evidence for the quantization of gravity and the existence of gravitons.

### Biography:

Maulik Parikh is Associate Professor in the Beyond Center for Fundamental Concepts in Science and in the Department of Physics at ASU. Parikh is a theorist whose research is focused on classical and quantum gravity. His paper on Hawking radiation as a tunneling phenomenon has nearly fifteen hundred citations and he has twice received the first award from the Gravity Research Foundation. Prior to coming to ASU, Parikh held a faculty position at IUCAA in India, and postdoctoral positions at the University of Utrecht in the Netherlands and at Columbia University. He obtained his bachelor's degree from the University of California, Berkeley, majoring in physics, mathematics, and English, and he received his PhD from Princeton University, where he once spent a weekend in Albert Einstein's house along with a dog, two cats, a frog, and a snake.

Host: Prof. Tanmay Vachaspati

View our Fall 2021 Physics Colloquium schedule at <https://physics.asu.edu/colloquia>