

IQSE AMO QO Seminar Series

Tuesday, September 12th, 2023, 11:30 am
ZOOM & IQSE seminar room (MPHY 578)

Pizza will be served for IQSE members at 11:00 am. The talk will start around 11:30 am

Dr. Yusef Maleki
(IQSE, Texas A&M University)

Gravitational Quantum Eraser

ABOUT THE SPEAKER: Yusef Maleki received his Master of Science degree in theoretical physics from the University of Mohaghegh Ardabili in Iran and his PhD degree in physics from Texas A&M University. Yusef is now Postdoctoral Research Associate at Texas A&M University.

EVENT DETAILS: The quest for a quantum mechanical description of gravity stands as a central pursuit in modern physics, holding the promise of unlocking answers to profound unresolved mysteries in the field. Any ultimate theory seeking to reconcile gravity with quantum physics must embrace fundamental quantum features like the uncertainty principle, quantum superposition, wave-particle duality, etc. Considering the concept of wave-particle duality, the quantum eraser reveals a fundamental difference between quantum mechanics and classical theory. In this talk, I will introduce the notion of a "gravitational quantum eraser," illuminating how the intrinsic quantum characteristics of gravity permit the emergence of a quantum eraser phenomenon within the framework of quantum gravity. I show that the gravitational quantum eraser offers a straightforward and experimentally possible platform for scrutinizing the quantum essence of gravity. In essence, by utilizing tools from quantum information theory, I show that the realization of the gravitational quantum eraser suffices to infer the quantum nature of the gravitational field.

ZOOM information:

<https://tamu.zoom.us/j/98156251523?pwd=QVdSdGxtL1UyY0g1L083SU5QR0QrUT09>

Meeting ID: 981 5625 1523

Passcode: 297578

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