

SEMINAR

DEPARTMENT OF PHYSICS

SPEAKER	:	Prof. Jonas R. Mureika Department of Physics Loyola Marymount University
TITLE	:	Gravitation, Black Holes, and Uncertainty Principles
DATE	•	Monday, April 28 th , 2025
TIME	:	12:35 P.M – 14:00 PM
PLACE	•	South Campus, Building C2, Floor -2, Room: 190

Abstract

The Generalized and Extended Uncertainty Principles (GUP and EUP) disclose a variety of new physics over a range of length scales. The GUP probes possible Planckian transitions to a theory of quantum gravity, for which a large number of studies populate the literature. Surprisingly, little attention has been paid to the EUP, since the governing length scale is taken to be Hubble sized. If this assumption is relaxed, the EUP may naturally lead to observable large-scale quantum gravity effects in supermassive black holes and other astrophysical systems, or possibly even new strong gravity black holes. This talk will discuss several applications of the EUP to gravitational physics, and their possible observational signatures that could be detected by the LSC, Event Horizon Telescope, and other future collaborations.