

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Prof Pasquale Bosso,
University of Lethbridge

TOPIC: *Quantum Gravity Phenomenology from the Generalized
Uncertainty Principle*

DATE: Tuesday March 10, 2020

TIME: 3:30-4:30 p.m.

PLACE: Physics 175

ABSTRACT:

One of the cornerstones of Quantum Mechanics (QM), Heisenberg's Uncertainty Principle (HUP), establishes that it is not possible to simultaneously measure with arbitrary precision both the position and the momentum of a quantum system. This principle, however, does not prevent one from measuring with infinite precision the system's position. However, theories of Quantum Gravity, aiming to bridge between General Relativity and QM, predict the existence of a minimal observable length - a minimal uncertainty on the position generally of the order of the Planck length. This prediction results therefore in a contradiction with HUP, requiring a modification of the principle. This need gave rise to the Generalized Uncertainty Principle (GUP). In this talk, I will show how the GUP can change known aspects of standard QM, leading to ways to test Quantum Gravity.

Coffee and Cookies will be served in Physics lounge at 3:00 p.m. for those attending the seminar.