DEPARTMENT OF MATHEMATICS COLLOQUIUM SERIES

Speaker: Killian J. Hitsman, NSU Mathematics Maior

Title: Classic/Quantum Harmonic Oscillator

Date: November 18th, 2020

Time: 12:00- 12:50 pm

Zoom:
Meeting ID: 811 500 7759
Passcode: 681149

A Harmonic Oscillator is an integral part of periodic motion in Classical and Quantum Theory. For systems with small fluctuations near stable points of equilibrium, the Harmonic Oscillator serves as a good approximation for measuring eigenstates and wave amplitudes of the particle(s). Aside from the classical version, this presentation will include the Lie Algebra of commutation relations as well as the ladder operators (Discrete and Continuous) as it pertains to a Quantum Harmonic Oscillator. After that, one of its' contributions to scalar fields in Quantum Field Theory, namely the Casimir Force, will be discussed. Whether it is a system of one oscillator or a system of decoupled oscillators, this concept could be applied to the fields of Quantum Field Theory and Mathematical Physics.

(please contact Donna Saporito at 954-262-8339 or dsaporito@nova.edu)

Halmos College of Arts and Sciences
NOVA SOUTHEASTERN UNIVERSITY

NSU Florida