

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Dr. Mark Walton, Department of Physics
University of Lethbridge

TOPIC: *Phase-Space Quantum Mechanics*

DATE: March 19th, 2019

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

PLACE: Physics 103

ABSTRACT:

An introduction will be given to the formulation of quantum mechanics in phase space developed by Weyl, Wigner, Moyal, Groenewold, and many others. Quantum theory can be done in phase space without the use of operators, but quantum weirdness cannot be eliminated. I will indicate how it is manifested in this alternative, standalone version of quantum mechanics. I will also illustrate how it has certain advantages over operator quantum mechanics, such as a more direct link to classical mechanics, and a straightforward treatment of different quantizations of the same classical system. Along the way, I will touch on my work, exploring the independent, autonomous property of phase-space quantum mechanics, and attempting to use certain advantages in novel applications. Mention will also be made of the many uses found for this representation of quantum mechanics, from quantum optics to non-associative generalizations of quantum mechanics motivated by quantum gravity.

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