

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Patrick H.M Galopeau, Research Scientist
LATMOS Lab, France

TOPIC: *Radio Emissions as tools for understanding the magnetic fields of Jupiter and Saturn*

DATE: October 9th , 2018

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

PLACE: Physics 103

ABSTRACT:

¹LATMOS-CNRS, UVSQ Université Paris-Saclay, Guyancourt, France (patrick.galopeau@latmos.ipsl.fr)

The magnetized planets of the solar system are the source of an intense nonthermal radio emission. With the exception of the Jovian synchrotron radiation emitted at decimeter wavelength, all these radio emissions are thought to be generated by a same fundamental mechanism: the cyclotron maser instability, which is a resonance coupling between waves and the electron population. Observing these planetary radio emissions allows us to gather information on the physical parameters of the plasma producing the electromagnetic waves, in particular the magnetic field of the planet. I will focus my presentation on Jupiter and Saturn, in particular on the Jovian Io-controlled decameter emission and on the Saturnian kilometric radiation, the observation of which led to discover the variable double rotation period of Saturn. I will present a new model for Saturn's inner magnetic field based on the data collected by the Cassini spacecraft which orbited around Saturn from July 2004 until September 2017. The observation of the radio radiation opens the door to a better knowledge of the inner structure of giant planets in addition to the understanding of the magnetospheric phenomena.

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