



Contribution ID: 1007

Type: **Invited Speaker / Conférencier invité**

****WITHDRAWN** Optical atomic clocks for gravitational wave physics**

Monday 13 June 2016 10:30 (30 minutes)

Gravitational wave (GW) astronomy has entered a new era with the direct detection of dekahertz-band GW signals by laser interferometers. As with the electromagnetic spectrum, observing gravitational waves in a range of different frequency bands will yield complementary insights into the astrophysics of gravitating objects. Gravitational waves at micro-hertz to milli-hertz frequencies can be detected using an array of optical atomic clocks on satellites, by leveraging the extreme precision available with these clocks. This method affords a technologically feasible approach to imaging the universe in a novel GW band. To enable this method, we are developing optical atomic clocks for use on board satellites, using a simplified scheme based on two-photon transitions. In this talk, I will describe the method of GW detection using optical atomic clocks, and present our progress towards building a portable clock.

Primary author: Dr VUTHA, Amar (University of Toronto)

Presenter: Dr VUTHA, Amar (University of Toronto)

Session Classification: M1-7 Atomic and Molecular Spectroscopy and Precision Measurements I (DAMOPEC) / Spectroscopie atomique et moléculaire et mesures de précision I (DPAMPC)

Track Classification: Division of Atomic, Molecular and Optical Physics, Canada / Division de la physique atomique, moléculaire et photonique, Canada (DAMOPEC-DPAMPC)