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## **SPECTROSCOPIC LINE-SHAPE STUDIES FOR ENVIRONMENTAL AND METROLOGIC APPLICATIONS**

*Monday, 15 June 2015 15:45 (30 minutes)*

Our research group has investigated the spectra of several gases of environmental importance using our 3-channel laser spectrometer or the experimental facility at the far-infrared beamline at the Canadian Light Source. Our results have been used by others through our contributions to the HITRAN and GEISA databases used by the atmospheric community and we have made our own contributions to the field.

Our group has also performed accurate measurements of the fundamental Boltzmann constant based on a line-shape analysis of acetylene spectra recorded using a tunable diode laser. This study is of high importance since the accuracy of our laser spectroscopy based measurement is the second best in the world.

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**Session Classification:** M2-10 Atomic and Molecular Spectroscopy: microwave to X-ray (DAMOPEC) / Spectroscopie atomique et moléculaire: des micro-ondes aux rayons X (DPAMPC)

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