

Séminaire ven 12 Mar 2010 11h / Seminar Fri Mar 12th 2010 11h

Conférencier/Lecturer: James R. Drummond
Universities Dalhousie and Toronto
CMOS Tour Speaker

Sujet/Subject: Ten Years of Terra:
Long Term Measurements of the
Atmosphere from Space

Présentation/Presentation: Anglais / English

Lieu/Room: Salle des vents (Dorval)

iweb: <http://web-mrb.cmc.ec.gc.ca/mrb/rpn/SEM/>

web: <http://collaboration.cmc.ec.gc.ca/science/rpn/SEM/index.php>

Résumé/Abstract

On 18th December 1999, the Terra spacecraft was launched into space carrying five instruments including the Canadian Measurements Of Pollution In The Troposphere (MOPITT) instrument. MOPITT was the first full-time monitor of the composition of the troposphere from space and aimed to make measurements of carbon monoxide (CO) over the planet from the surface to about 10km altitude for a period of five years.

At the start of 2010 MOPITT is completing ten successful years of operations. It has now gathered over two billion measurements of CO. These measurements have demonstrated the changes of CO in both space and time and shown a planet with very large variations in concentrations depending upon events and circumstances. Many phenomena that had been partially measured or only conjectured have now been mapped experimentally. In addition, new phenomena have been seen and our understanding of how pollution is transported around the globe has been changed.

Experience with the MOPITT instrument and with data processing have led to significant improvements in our understanding of the nature of the measurements and their strengths and limitations. These studies have led to improvements in our ability to understand the sensitivity of the measurements to boundary-layer CO (to cite a single example). Knowledge of how MOPITT has worked in practice has led into a discussion of future improvements of both the MOPITT instrument datasets and future instruments using similar techniques.

MOPITT was provided to NASA's Terra spacecraft by the Canadian Space Agency and was built by COMDEV of Cambridge, Ontario. Data processing is performed by the MOPITT team at the National Center for Atmospheric Research, Boulder, CO. Instrument control is by the team at the University of Toronto.