

## Message from Shigeo Yoden

Dear Colleagues:

We invite your contributions to the following Symposium of ICMA (International Commission on the Middle Atmosphere) in MOCA-09 Joint Assembly (MOCA-09 stands for IAMAS]IAPSO]IACS]Assembly]2009), and look forward to having a fruitful symposium with your active participation.

With best regards,

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M01 Session "Middle Atmosphere Science" in MOCA-09 Joint Assembly

four days in July 19-29, 2009

in Montr eal, Qu bec, Canada

Deadline of abstract submission:

**JANUARY 23, 2009**

at [http://www.moca-09.org/e/02-abstracts\\_submission\\_e.shtml](http://www.moca-09.org/e/02-abstracts_submission_e.shtml)

Papers related to any aspect of the dynamics, chemistry, or physics of the atmosphere from near the tropopause to the lower thermosphere are appropriate for this session. Observational, modeling, theoretical, and laboratory studies are all solicited. Research topics include (but are not limited to): multiple-scale dynamics and mixing, observations and modeling of gravity waves, stratospheric chemistry and ozone, vertical coupling in the polar regions, microphysics, chemistry and dynamics in the TTL or the extratropical UTLS, tropical/extratropical interactions, and intraseasonal and interannual variations in the middle atmosphere. We specially invite new results that will provide new insights into the science of the middle atmosphere.

Responsible commission: ICMA

**Convenors:** Shigeo Yoden, Gregory Bodeker, Daniel Marsh, Charles McLandress, Ross Salawitch

**Invited Speakers** (as of Dec. 20, 2008)

-Ted Shepherd (University of Toronto)

Overview of current issues of stratospheric dynamics and chemistry

(tentative title)

-Damian Murphy (Australian Antarctic Division)

Coupling of the stratosphere to Antarctic MLT tides as observed with radars

-Joan Alexander (NorthWest Research Associates)

Our current understanding of the role of gravity waves in middle atmospheric dynamics and unresolved questions

-Takeshi Horinouchi (Hokkaido University)

Spatial structure of stratospheric disturbances derived from GPS occultation data

-Rolando Garcia (NCAR)

A review of recent satellite measurements of large-scale waves in the MLT region and comparisons to models (i.e WACCM)

-Kaoru Sato (University of Tokyo)

Simulations of the middle atmosphere using a very high resolution model: Gravity waves, planetary waves and equatorial zonal wind oscillations

-Saroja Polavarapu (Environment Canada)

Middle atmosphere data assimilation for climate applications

-Elisa Manzini (Centro Euro-Mediterraneo per i Cambiamenti Climatici)

Natural variability in chemistry climate models

-Kaley Walker (University of Toronto)

Studying the middle atmosphere with the Atmospheric Chemistry Experiment (ACE) satellite mission

-Markus Rex (Alfred Wegener Institute)

Polar ozone chemistry: Field observations and ozone loss rates

-Alan Robock (Rutgers University)

Geoengineering by injecting aerosol precursors into the stratosphere:

Climate responses and ethical issues

-Marc von Hobe (Forschungszentrum Juelich)

Polar ozone photochemistry: Critical parameters and their uncertainties