



# Joint SPARC Workshops on Data Assimilation and Stratospheric Winds

Sept. 12-15, 2005

**Banff, Alberta, Canada**

## Workshop Programs

*The location for all oral presentations is the*

*Professional Development Centre Room 103 (BP Canada Energy room)*

**SPARC-DA3 sessions:** Starts 9:00 am on Monday September 12, 2005  
Ends 9:00 pm on Wednesday September 14, 2005

**SPARC-Winds sessions:** Starts 9:00 am on Wednesday September 14, 2005  
Ends 5:30 pm on Thursday September 15, 2005

### Day 1: Monday September 12, 2005

**9:00 am** *Welcome from Environment Canada*

**9:10 am** Goals of the SPARC Data Assimilation workshop - **Alan O'Neill** (DARC)

**9:30 am** Issues in Middle Atmosphere Data Assimilation – **S. Polavarapu** (MSC)

**10:00 am** Stratospheric Data Assimilation at the Met Office – **D. Jackson** (Met Office),  
**R. Swinbank, M. Keil, A. Bushell, and Hazel Thornton**

**10:30 am** COFFEE BREAK AND POSTERS (Displayed Monday – Tuesday)

**POSTER:** Multiple Satellite Ozone Data Assimilations in the NCEP Global Forecast System – **Shuntai Zhou** (NCEP)

**POSTER:** Chemical Hindcast experiments using a GCM – **M. Parrington** and **P. Braesicke** (Cambridge U)

**POSTER:** A Fast Stratospheric Ozone Chemistry Scheme and its Potentials for Data Assimilation – **M. Bourqui** (McGill University)

**POSTER:** Lidar and Radar observations UT/LS Dynamics Over Tropical and Sub-tropical Stations – **J. Rao** (Indian Institute of Tropical Meteorology)

**11:00 am** Assimilation of Multiple Ozone Sources into the NCEP Global Forecast System – **Shuntai Zhou** (NCEP), **Craig S. Long, Lawrence E. Flynn, Trevor Beck, and Alvin J. Miller**

**11:30 am ORAL PRESENTATIONS OF MONDAY – TUESDAY POSTERS**

**11:50 am LUNCH**

**1:30 pm DISCUSSION: SPARC and the International Polar Year**

**2:30 pm** Assimilation of MLS Data with ECMWF System – **A. O’Neill** (DARC)

**3:00 pm** A Generalized Innovation Operator for the Assimilation of Integral Measurements – **Yves J. Rochon** (MSC) and **Saroja Polavarapu**

**3:30 pm COFFEE BREAK AND POSTERS** (Poster presenters available)

**4:00 pm** Comparison of Initialization Methods for a Climate Assimilation Run - **David Sankey** (U Toronto), **Shuzhan Ren**, **Saroja Polavarapu**, **Yves Rochon**, and **Yan Yang**

**4:30 pm** Tackling Stratospheric Humidity Assimilation – **Hazel Thornton** (Met Office), **David Jackson**, and **Richard Swinbank**

**5:00 pm** *End of day 1*

**Day 2: Tuesday September 13, 2005**

**9:00 am** Chemical-Dynamical Coupling in Data Assimilation – **R. Menard** (MSC), **D. Fonteyn**, **S. Chabrilat**, **P. Gauthier**, **M. Charron**, **A. Robichaud**, **Y. Rochon**, **J. C. McConnell**, and **J. W. Kaminiski**

**9:30 am** – Ozone data assimilation based on GOME, SCIAMACHY and OMI data – **B. Bregman** (Royal Netherland Meterological Institute)

**10:00 am** The SACADA System for New Operational 4Dvar Chemistry Data Assimilation – **H. Elbern** (U Cologne) and **J. Schwinger**

**10:30 am COFFEE BREAK AND POSTERS**

**11:00 am** Assimilation of Odin/SMR Data into a High Resolution Eulerian Transport Model - **John Rösevall** (Chalmers U, Sweden) and **Donal Murtagh**

**11:30 am** Ensemble filtering using a 3d chemical-dynamical middle atmosphere model - **Tomoko Matsuo** (NCAR), **Jeffrey Anderson**, **Dan Marsh**, and **Anne Smith**

**12:00 pm LUNCH**

**1:30 pm** Choosing Meteorological Variables to be Assimilated into CTM Driven GCM for Ozone Re-analysis – **K. Miyazaki** (Tohoku U, Japan), **T. Iwasaki**, **K. Shibata**, **M. Deushi**, and **T. Sekiyama**

**2:00 pm** The ASSET Analysis Inter-comparison Project: Assimilation into a GCM - **William Lahoz** (DARC) and **Alan Geer**

**2:30 pm DISCUSSIONS: Issues in Middle Atmosphere Data Assimilation and the Role of SPARC** (Ozone Inter-comparisons; Process Oriented Diagnostics; etc.)

**3:00 pm** COFFEE BREAK AND POSTERS

**3:30 pm DISCUSSIONS: Issues in Middle Atmosphere Data Assimilation and the Role of SPARC (Ozone Inter-comparisons; Process Oriented Diagnostics; etc.)**

**5:00 pm** *End of Day 2*

## **Day 3: Wednesday September 14, 2005**

*Start of SPARC-WINDS themed sessions*

**9:00 am** *Welcome to Joint workshops-* Ted Shepherd (U Toronto)

**9:30 am** Review and Update of Assimilated Meteorological Dataset Inter-comparisons – Gloria L. Manney (JPL), Douglas R. Allen, Kirstin Krueger, Steven Pawson, Joseph L. Sabutis, Michelle L. Santee, and Richard Swinbank

**10:30 am** COFFEE BREAK AND POSTER

**POSTER:** Diagnosis of Mean-Meridional Circulation and Meridional Constituent Transport Based on Mass Weighted Isentropic Zonal Means – K. Miyazaki (Tohoku U, Japan) and R. Iwasaki

**11:00 am** Tropical Winds in GEOS-4 Meteorological Analysis – Steven Pawson (NASA-Goddard), Wei-Wu Tan, Ivanka Stajner, Gregory Gaspari, Stephen E. Cohn, Andrew Tangborn and Jing Guo

**11:30 am** Stratospheric Winds in ERA and NCEP-CPC Analysis - Variability associated with ENSO – Elisa Manzini (Istituto Nazionale di Geofisica e Vulcanologia, Italy)

**12:00 pm** LUNCH

**1:30 pm DISCUSSION: How well do we know Stratospheric Winds?**

**2:30 pm** Nudging QBO Zonal Winds in Climate Models, a test case for the Assimilation of Winds in Tropical Stratosphere – Marco A. Giorgetta (Max Planck Institute, Hamburg)

**3:00 pm ORAL PRESENTATION OF WEDNESDAY POSTER**

**3:05 pm** COFFEE BREAK AND POSTER (Poster presenter available)

**3:35 pm** Assimilation of Winds in the Tropics – use of line-of-sight wind profiles – Erlan Källén (Stockholm U), Nedjelijka Zagar, and Nils Gustafsson

**4:05 pm** Development of a Sequential Estimator for Assimilation of Ground- and Space-based Mesospheric and Lower Thermospheric Winds – Ruth S. Lieberman (Northwest Research Associates) and Dennis Riggan

**4:35 pm** A Data Assimilation Model for Determining the Mean State and Migrating Tide Structures in the Mesosphere and Lower Thermosphere using Satellite Measurements of Wind and Temperature – **David A. Ortland** (Northwest Research Associates)

**5:05 pm** *End of Day 3*

**7:00 pm** *Banquet – SPARC-DA3 and SPARC-Winds workshops*

*End of data assimilation session*

## **Day 4: Thursday September 15, 2005**

**9:00 am** The value of direct wind measurements in the middle atmosphere – **T. Dunkerton** (Northwest Research Associates)

**10:00 am** The Waves Michelson Interferometer (WaMI) and a Middle Atmosphere Dynamics Mission – **W. Ward** (U New Brunswick)

**10:30 am** COFFEE BREAK AND POSTER

**11:00 am** ADM-Aeolus, the First Doppler Wind Lidar Sampling Vertical Profiles of the Horizontal Wind from Space - **Paul Ingmann, Anne Grete Straume** and the members of the **ADM-Aeolus Mission Advisory Group**

**11:30 am** Performance Model for the SWIFT Instrument on Chinook—**Yves J. Rochon** (MSC), **Peyman Rahnama** and **Alan Scott**

**12:00 pm** LUNCH

**1:30 pm** Current Status of SWIFT on Chinook – **Alan Scott** (EMS Technologies Canada) **Brian Mackay, Ian McDade, Peyman Rahnama** and **Craig Haley**

**2:00 pm** Estimating Measurement Requirements for the SWIFT Satellite Instrument using a Middle Atmosphere GCM – **C. McLandress** (U Toronto)

**2:20 pm** Do we need global observations of Stratospheric Winds? – **W. Lahoz** (DARC)

**2:50 pm** Lessons from the SWIRLS OSSE — **Steven Pawson** (NASA GSFC)

**3:00 pm** COFFEE BREAK AND POSTER

**3:30 pm** **DISCUSSION: Measurement Requirements/ Wrap-up of Winds workshop**

**5:00 pm** **DISCUSSION: Final conclusions and recommendations**

**5:30 pm** *End of Day 4*

*END of workshops*