The SSG

Neil Harris  
Co-Chair

Judith Perlwitz  
Co-Chair

Boram Lee  
WCRP Liaison

SPARC  
Stratosphere-troposphere Processes And their Role in Climate  
SPARC Office  
Zurich
Community

13 SSG Members

46 Activity Leaders

>3400 Community Members
Themes

Atmospheric Dynamics + Predictability

Chemistry + Climate

Long-term Records for Climate Understanding
Themes

Atmospheric Dynamics + Predictability

How can the impact of weather and climate be reduced?

Chemistry + Climate

How can we limit the future impacts of air quality and climate?

Long-term Records for Climate Understanding

What is happening and how sure are we of that?
Activities

- Atmospheric Temperature Changes
- Stratospheric Sulfur
- Water Vapour
- Composition + Asian Monsoon
- Ozone Trends
- Solar Influences
- Quasi-Biennial Oscillation
- Dynamical Variability
- Reanalysis Intercomparison
- Assessing Predictability
- Fine-scale Processes
- Gravity Waves
- Data Assimilation
- Chemistry-Climate Modelling
- Polar Stratospheric Clouds
- Assimilating Gravity Waves
- Quasi-Biennial Oscillation
- Assessing Predictability
CMIP6:

+ Forcing Datasets:
  - Ozone
  - Volcanoes
  - Solar
Highlights

QBO disruption
Normally the most predictable phenomena....
Reversal of flow due to northern mid-latitude wintertime disturbance – harbinger of more?

An unexpected disruption of the atmospheric quasi-biennial oscillation

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Science REPORTS

Downloaded from http://science.sciencemag.org/ on November 3, 2016
Highlights
Solving the Mystery of Carbon Tetrachloride

Imbalance between reported emissions and atmospheric concentrations (WMO 2014):
Better agreement – agree at edge of estimated uncertainties....
Report submitted to Parties of Montreal Protocol
Highlights

SPARC Data Initiative – Satellite Intercomparisons

Last 15 years - golden age of atmospheric satellite measurements

Critical to know if measurements agree
Highlights

Trends from multi-instrument records
Trend uncertainties depend on assumptions of independence of data sets and derived trends
Ozone from SI2N – could easily have used T, H2O or aerosols as example instead
Highlights

Co-organisation of the workshop on:
“Drag Processes and their Links to Large-scale Circulation”

ECMWF, Reading, UK
12-15 September

WCRP/SPARC workshop on:
“Grand Challenges in Climate Science”

+ increasing emphasis on tropospheric composition and dynamics

Berlin, Germany
31 October
Future Aims

Mainly internal business, on-going

- Provide guidance for next-generation reanalysis systems with the S-RIP report.
- Assess data sets for model validation, with careful quantification of uncertainties.
- Enhance understanding of troposphere-stratosphere coupling in the tropics and effects on convection.
- To better understand the impact of the monsoon convection systems on the composition, radiation, and dynamics of the troposphere.
- Promote research in preparation of various assessment reports (IPCC AR6, WMO/UNEP 2018 Ozone Assessment).
- Contribute to model development by identifying model requirements to resolve strat-trop teleconnection pathways.
- Help facilitate the new Grand Challenge on Carbon and Climate and develop a complementary SPARC initiative on the short-lived climate forcers.
- Lead the new focus on “How will storm tracks change in a future climate?” within the Grand Challenge on Clouds, Circulation, and Climate Sensitivity.
- Enhance understanding on the role of the stratosphere in tropospheric prediction on the S2S time scale.
General Assembly 2018

Kyoto, Japan, 2-6 October 2018
Plans

SPARC Office will transition to DLR, Germany

Hans Volkert, Office Director
For discussion here

• SPARC uses its funding only to cover travel to activity workshops (and training schools), with the aim of providing support for early career researchers and researchers from developing countries mainly. **The reduced funding means a much reduced ability to get these people to our activity workshops.**

• A further major issue in terms of the reduced funding is support of the 2018 SPARC general assembly.

• Working with existing groups on tropospheric composition and defining a clear WCRP/SPARC contribution. (IGAC, ILEAPS...; HTAP;...)

• A high level promotion of the value of WCRP coordination of international climate research would greatly help raise profile in national agencies (as well as direct finance).
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South America
Emerging Activities
Thank You!

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