CCMI 2023 Science Workshop Programme

October 3 – 5, 2023

All times are listed as Central European Summer Time (CEST) - UTC + 2 hours

Tuesday 3rd October

Session 1: CCMI Workshop Overview

09:00-09:10	Welcome **Météo-France and the LOC**
09:10-09:30	Introduction / Goals of the workshop **CCMI Co-chairs**
09:30-09:50	Behind the scenes of the CCMI-2022 archive at CEDA **Charlotte Pascoe**
09:50-10:10	Earth System Model Evaluation Tool (ESMValTool): analyzing CMIP data made easy **Birgit Hassler**
10:10-10:30	The ozone CCI / C3S Climate Data Records portfolio and recent science results **Daan Hubert**
10:30-11:00	Poster 'Lightning' Presentations
11:00-12:30	**Poster Session 1** - with **Coffee/Tea**
12:30-13:30	**Lunch**

Session 2: CCMI and other collaborative projects

13:30-13:50	AerChemMIP2: Advancing our understanding of the role of trace gases and aerosols in climate **Fiona O'Connor**
13:50-14:10	The SPARC-Reanalysis Intercomparison Project: Summary of Phase 1 and Plans for Phase 2 (S-RIP2): Chemical Reanalyses & Air Quality, Tropospheric Circulation, Extreme Events and More **Jonathan Wright**
14:10-14:30	Planning the next round of HTAP multi-model experiments (HTAP3) **Tim Butler**
14:30-14:50	Understanding Ozone-QBO Feedbacks: A New Joint SPARC Quasi-Biennial Oscillation Initiative (QBOi) and Chemistry Climate Modeling Initiative (CCMI) Activity **Clara Orbe**
14:50-15:10	The Tropospheric Ozone Assessment Report (TOAR) ozone radiative forcing working group: Progress and Plans **Bill Collins**
15:10-15:30	An ace in the hole or a house of cards: In search of a DeCK experiment for Chemistry and Aerosols **Alexander Archibald**
15:30-16:00	**Coffee/Tea**
16:00-18:00	Discussion: Planning a new set of CCMI experiments
18:00	**Icebreaker**

Wednesday 4th October

Session 3: Ozone and Climate

09:00-09:20 Stratospheric ozone-climate interactions in idealized DECK experiments
Timofei Sukhodolov

09:20-09:40 Past and future climate forcing from ozone depleting substances
William Collins

09:40-10:00 Natural short-lived halogens exert an indirect cooling effect on climate
Alfonso Saiz López

10:00-10:20 The influence of future changes in springtime Arctic ozone on stratospheric and surface climate
Gabriel Chiodo

10:20-10:50 **Coffee/Tea**

Session 4: Tropospheric Chemistry

10:50-11:10 External forcing of tropospheric ozone budget
Mathew Evans

11:10-11:30 Forecasted climate penalties to surface ozone and PM2.5 across the 21st century under different SSP scenarios
Lee Murray

11:30-11:50 Analysis of the differences in tropospheric ozone and methane lifetime between CCMI1 and CCMI2 simulations
Mariano Mertens

11:50-12:10 Constraining tropical hydroxyl radical abundance with satellite observations of its drivers
Daniel C. Anderson

12:10-12:30 Uncertainty in TTL processes and their impact on Stratospheric Water Vapor in CCMI Simulations
Joowan Kim

12:30-12:50 The Impact of Asian Summer Monsoon on Transport of Very-Short-Lived Chlorocarbons to the Stratosphere
Qing Liang

12:50-14:00 **Lunch**

Session 5: Effects of Hunga Tunga – Hunga Ha'apai

14:00-14:20 The SPARC Hunga Tonga-Hunga Ha'apai Special Report
Paul Newman

14:20-14:40 Ongoing impact of the Hunga Tonga - Hunga Ha'apai Eruption on Stratospheric Ozone in 2023 (and beyond)
Martyn Chipperfield

14:40-15:00 Chemistry contribution to stratospheric ozone depletion after the unprecedented water rich Hunga Tonga eruption
Jun Zhang

15:00-15:20 Hunga-Tonga impacts on the stratosphere from WACCM ensemble simulations
William Randel

15:20-15:40 The impact of January 2022 Eruptions of Hunga Tonga-Hunga Ha'apai on Stratospheric Ozone in the NASA GEOS Earth System Model
Qing Liang

15:40-16:00 The influence of internal climate variability on stratospheric water vapour increases after large-magnitude explosive tropical volcanic eruptions
Xin Zhou

16:00-17:30 **Poster Session 2** - with **Coffee/Tea**

20:00 **Conference dinner: *Ma biche sur le toit***

Thursday 5th October

Session 6: Chemistry-Climate Interactions

09:00-09:20	How well do CCMI models represent interannual polar vortex-ozone co-variability during northern hemispheric winter? **Frederik Harzer**
09:20-09:40	Weakening of springtime Arctic ozone depletion with climate change **Marina Friedel**
09:40-10:00	What determines the spread in Arctic ozone recovery rates? **Marta Abalos**
10:00-10:20	Injection strategy – a driver of atmospheric circulation and ozone response to stratospheric aerosol geoengineering **Ewa Bednarz**
10:20-10:40	The future of the ozone layer in a stratospheric aerosol injection scenario **Andrin Nico Jörimann**
10:40-11:10	**Coffee/Tea**

Session 7: Observations and Models

11:10-11:30	Construction of daily gap-free long-term stratospheric trace gases data set using machine learning **Sandip Dhomse**
11:30-11:50	Emerging divergence of observed and modeled ozone in the tropical stratosphere and Troposphere **Gabriel Chiodo**
11:50-12:10	CCMI-2022 Ref-D1 and Ref-D2 stratospheric ozone profiles: trends, natural variability and comparison to observations and CCMI-1 Ref-C2 **Kleareti Tourpali**
12:10-12:30	The conundrum of the recent variations in stratospheric ozone: An update **Andreas Chrysanthou**
12:30-14:00	**Lunch**
14:00-15:30	Discussion: Planning a new set of CCMI experiments - Next steps
15:30	Close of the Meeting

Posters

For display from 08:00 October 3rd to 14:00 October 5th

The role of sea-surface conditions in Antarctic polar-vortex and associated wave forcing with a multi-member ensemble simulation of the CCSR/NIES-MIROC3.2 CCM
Yousuke Yamashita

OMI derived tropospheric NO2 trends over urban areas of Bangladesh from 2015-2022
Abdullah Al Nayeem

Remote sensing of air pollution due to Hunga Tonga eruption
Salman Tariq

Impacts of the Hunga Tonga-Hunga Ha'apai Eruption: Insights from the SOCOLv4 ESM
Ales Kuchar

Probing the role of stratospheric circulation on modelled and observed ozone trends
Andreas Chrysanthou

Simulated mixing in the upper troposphere by small scale turbulence
Chun Hang Chau

Effect of Lockdown on Aerosol Optical Depth using Satellite (MODIS Aqua and Terra), based observation over Surat
Ranjitkumar Solanki

Dependence of column ozone on future ODSs and GHGs in the variability of 500-ensemble members
Hideharu Akiyoshi

Nitrogen dioxide as Proxy Indicator of Air Pollution from Fossil Fuel Burning in New Delhi: Impact on Weather as Revealed by Sentinal-5 Precursor (5p) Spectrometer Sensor
Pavan Kumar

Blue–Red–NIR Model for Chlorophyll- a Retrieval in Highly Turbid Inland Densu River Basin in South-East Ghana, West Africa using Landsat-8 Optical Sensor Data
Aishwarya

The impact of El Niño–Southern Oscillation on the total column ozone over the Tibetan Plateau
Yang Li

Evaluation of the NASA GEOS Chemistry-Climate Model Coupled Atmosphere-Ocean Configuration
Peter Colarco

O3as Plotting Tool: Unveiling Ozone Trends and Stratospheric Ozone Recovery
Tobias Kerzenmacher

Stratospherically induced circulation changes under the extreme conditions of the No-Montreal-Protocol scenario
Fraziska Zilker

Aerosol Effects on Heating in the Asian Monsoon Tropopause Layer
Jonathon Wright

Long-Term Variability of Aerosol Concentrations and Optical Properties over South Asia
Muhammad Zeeshaan Shahid

Spatio temporal variations of ozone concentration over IGP, India
Sunita Verma