

Agenda for GCE3 (3rd Regional GEOS-Chem Europe User's Meeting)
18-20 August 2025

<https://geoschem.github.io/gce3.html>

Talk time allocations:

GEOS-Chem overview talks: 20 min (15-16 min talk; 4-5 min Q&A)

Keynote talks: 30 min (25-26 min talk, 4-5 min Q&A)

Science talks: 15 min (12-13 min talk, 2-3 min Q&A)

Poster summaries: 1 min

Day 0, Monday 18 August

Location: Malet Place, Engineering Building, Gower Street

17:00 Early career event (details forthcoming)

Day 1, Tuesday 19 August

Location: Denys Holland Lecture Theatre, Bentham House, Endsleigh Gardens

Day 1 Morning Session 1: Model Overview and Opening Talks

Session Chair: Colette Heald

Slides loaded by Connor Barker

- 08:30-09:00 Registration
- 09:00-09:20 Welcome. Meeting and GEOS-Chem Model Overview, Eloise Marais, UCL
- 09:20-09:40 Broadening Scope of GEOS-Chem, Seb Eastham, Imperial
- 09:40-09:55 Chemical uncertainties in chemistry transport modelling, Mat Evans, York Uni
- 09:55-10:10 Investigating increasing levels of carbon monoxide across southern extratropical latitudes, Clara Nussbaumer, ETH Zurich
- 10:10-10:25 CO₂ modelling with GCHP, Kevin Bowman, JPL / CalTech
- 10:25-10:30 Inverse modeling of satellite and ¹³C observations highlights the role of wet tropics in driving the 2020–2022 methane surge, Zhen Qu, North Carolina State Uni
- Climate impact of atmospheric methane removal strategies, Qimin Sun, U. Edinburgh
- Implementation of the Global Forest Fire Emissions Prediction System in GEOS-Chem, Timothé Payette, Montréal Uni

10:30-11:00: Tea/Coffee Break Provided

Day 1 Morning Session 2: Air quality and atmospheric composition

Session Chair: Paul Griffiths

Slides loaded by Bex Horner

- 11:00-11:30 **KEYNOTE:** Clare Heavyside, title TBD, UCL
- 11:30-11:45 Impact of particulate matter reduction on rising surface ozone pollution in India, Gopikrishnan Sreerekha Gopikrishnan, IIT Kharagpur
- 11:45-12:00 Multiphase HONO formation pathways in Central London, Eleanor Gershenson-Smith, UCL
- 12:00-12:15 Improved surface NO₂ estimates over India using satellite retrievals and modelling, Ardra Divakaran, IIT Delhi.

- 12:15-12:20 Characterizing the air quality and health impacts from oil and gas emissions in Mexico using GCHP, Omar Nawaz, Cardiff Uni.
 Future projection of global air pollution in 2060, Hiroo Hata, AIST
 Modelling southern Africa air pollution, Mbavhalelo Maliage, U. York
 Assessing the need for heterogeneous production of small acids in GEOS-Chem using DC8 aircraft observations, Huilin Zhan, UCL

12:20-14:00: Lunch (plenty of options in Fitzrovia, Bloomsbury and beyond)

Day 1 Afternoon Session 1: ECMWF / GEOS-Chem gas-phase chemistry (mostly halogens!)

Session Chair: Kevin Bowman

Slides loaded by Eleanor Gershenson-Smith

- 14:00-14:30 **KEYNOTE:** ECMWF products and activities of appeal to the GEOS-Chem community Vincent-Henri Peuch, ECMWF
- 14:30-14:45 Understanding chlorine chemistry in GEOS-Chem, Amy Lees, U. York
- 14:45-15:00 The role of iodine chemistry in a changing climate, Ryan Pound, U. York
- 15:00-15:15 The importance of speciated iodine aerosol in gas-phase reactive iodine abundance, Alli Moon, U. Washington
- 15:15-15:30 Impacts of aromatic peroxy radical chemistry on atmospheric ozone, Stephen MacFarlane, U. Wollongong
- 15:30-15:35 Present-day health burden of air pollution from rapidly growing UK road transportation hubs, Karn Vohra, U. Birmingham
- Impacts of the GAINS LRTAP MTR emission scenario in Europe for 2040, Coralina Hernández Trujillo, CIEMAT
- Spatial and diurnally varying lightning NO_x production rates for use in GEOS-Chem, Bex Horner, UCL
- Title TBD, Oliver Marx, Imperial
- 15:35 Group Photo

Day 1 Afternoon Session 2: Posters, Refreshments and Networking

- 15:45-17:30 Poster Session, Hub on the First floor of Bentham House
- 17:30 Take down posters, Conclusion of Day 1

Day 2, Tuesday 20 August

Location: Denys Holland Lecture Theatre, Bentham House, Endsleigh Gardens

Day 2 Morning Session 1: Biosphere-Atmosphere Interactions

Session Chair: Zhen Qu

Slides loaded by Oliver Marx

- 09:15-09:45 **KEYNOTE:** Modelling atmospheric compositions with the EMEP atmospheric chemistry transport model, Massimo Vieno, UKCEH
- 09:45-10:00 Integration of atmospheric chemistry and terrestrial biogeochemistry to advance the understanding of global nitrogen cycle, Cheng Gong, Max Planck Institute for Biogeochemistry
- 10:00-10:15 Evaluating the effects of variability in biomass burning emission inventories on modeled smoke concentrations: Insights from the 2019 and 2021 Canadian wildfire seasons, Samaneh Ashraf, Montréal Uni
- 10:15-10:30 Influence of humidity-dependent stomatal conductance of VOCs on ozone and secondary organic aerosols (SOA), Connor Barker, UCL

10:30-11:00 Tea/Coffee provided

Day 2 Morning Session 2: Persistent Pollutants

Session Chair: Mat Evans

Slides loaded by Connor Barker

- 11:00-11:30 **KEYNOTE:** Met Office dispersion modelling tools for pollen and air quality, Lucy Neal, UK Met Office
- 11:30-11:45 PFAS species in the Arctic, Freja F. Oesterstroem, Aarhus Uni.
- 11:45-12:00 Development and applications of the AWS-based Integrated Methane Inversion (IMI) tool for quantifying methane emissions with satellite observations, Daniel Varon, MIT
- 12:00-12:15 High-resolution modelling of greenhouse gases in the Greater Toronto Area using WRF-GEOS-Chem, Christian DiMaria, U. Toronto
- 12:15-12:30 Modelling the atmospheric degradation of HFO-1234ze, Beth Killen, UNSW Sydney
- 12:30-12:45 Sectoral top-down emission estimates using TEMPO and LEO satellite observations, Zhen Qu, North Carolina State Uni.

12:00-13:30: Lunch (plenty of options in Fitzrovia, Bloomsbury and beyond).

Day 2 Afternoon Session: Multiphase Chemistry

Session Chair: Daniel Varon

Slides loaded by Bex Horner

- 13:30-14:00 **KEYNOTE:** Title TBD, Alex Archibald, UK NCAS and U. Cambridge
- 14:00-14:15 Global impacts of organic aerosol phase state, Yumin Li, ETH Zurich
- 14:15-14:30 Secondary organic aerosol formation in an urban coastal region, Shruti Tripathi, IIT Bombay
- 14:30-14:45 Updates on Wet Scavenging and Its Impacts on Horizontal and Vertical Aerosol Distributions, Gan Luo, SUNY-Albany
- 14:45-14:55 Closing Remarks (Seb + Eloise)
- 15:00 Meeting adjourns