



## **Task Force on Hemispheric Transport of Air Pollution**

# **Status of TF HTAP Activities**

### **Co-Chairs**

Heather Morrison (Canada)

Terry Keating (U.S.)

### **Vice Chairs**

Tim Butler (Germany)

Jacek Kaminski (Poland)

10 September 2019

# TF HTAP Leadership Team

## Co-Chairs

Terry Keating, U.S. Environmental Protection Agency

Heather Morrison, Environment and Climate Change Canada

## Vice Chairs

Tim Butler, Institute for Advanced Sustainability Studies,  
Germany

Jacek Kaminski, Institute of Environmental Protection, Poland

# Task Force Goal:

- Foster international scientific cooperation to improve understanding of intercontinental transport of air pollution across the Northern Hemisphere
  - How do changes in emissions in one part of the world affect air quality in other parts of the world?
  - How do extra-regional emissions affect human and ecosystem health within a given region?

# HTAP2: 2<sup>nd</sup> Suite of Cooperative Experiments to Assess Intercontinental Transport of Air Pollution

Atmospheric Chemistry and Physics

An interactive open-access journal of the European Geosciences Union

Special issue

Global and regional assessment of intercontinental transport of air pollution: results from HTAP, AQMEII and MICS

Editor(s): F. Dentener, S. Galmarini, C. Hogrefe, G. Carmichael K. Law, B. R. D. Denby, and T. Butler

## TOAST 1.0: Tropospheric Ozone Attribution of Sources with Tagging for CESM 1.2.2

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Geosci. Model Dev., 11, 2825–2840, 2018

<https://doi.org/10.5194/gmd-11-2825-2018>

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## Source attribution of European surface O<sub>3</sub> using a tagged O<sub>3</sub> mechanism

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Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-225>

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Discussion started: 29 April 2019

# Key Messages:

- Intercontinental transport is more important for ozone than particulate matter (PM)
- Background ozone is very sensitive to methane concentration
  - Marine shipping emissions were also impactful
- Nearby sources are more important for highest ozone concentrations
  - But hemispheric transport still contributes ca. 20-30% to regional-scale impacts of ozone
- Springtime ozone especially influenced by hemispheric transport of ozone from anthropogenic precursors

# Next Steps:

- HTAP2 was based on 2010 emissions:
  - **How has intercontinental transport changed since then?**
- Ozone is sensitive to methane concentrations:
  - **How would ozone respond to reductions in methane?**
- How can we maximize the utility of the results from HTAP2 to inform current policy-related questions?
  - **Continue to develop openFASST Tool for global scenario analysis and uncertainty assessment**
- How can we encourage research to better address policy-related questions in the future and prioritize activities of the Task Force?

# 2020-2021 TF HTAP Work Plan Elements

## Work Plan Projects:

- Global Emissions Mosaic Update (HTAPv3) (1.1.4.5)  
GEIA Meeting, November 2019
- Ozone, Methane Mitigation, and Health and Ecosystem Benefits (1.1.4.7)  
Workshop, Edinburgh, March/April 2020, with TOAR, ICP Veg, AQMEII, MICS, ...
- Continued Development of the openFASST Tool (1.1.4.6, 1.1.4.1)  
For Global Scenario Analysis and Uncertainty Assessment

## Topics for Discussion within the Task Force & Community:

- Extra-Regional Attribution of O<sub>3</sub>, PM Trends for GP Review (1.1.3.2)  
What is the contribution of extra-regional sources to observed trends?
- Impacts of Shipping (1.1.4.4)  
Treatment of Ship Plumes, Refining S/R to Distinguish ECAs
- Hg and POPs (1.1.4.3)  
Taking Stock of Progress in Other Forums, Identifying Policy Relevant Needs  
(Suggest Presentations on AMAP Hg and POPs Assessments at the 6<sup>th</sup> Joint Session in 2020)

# Outreach and “Tracking”

CAMS and CEOS

AMAP SLCF, Hg, POPs

Minamata (Hg)

Stockholm (POPs)

AerChemMIP and AeroCom

WMO MMF-GTAD

EANET and APCAP

AQMEII and MICS-Asia

CCAC

WHO and GBD

There is a lot of work going on in the community from which we can learn, some of which relies on contributions from the Convention. We will try to improve our ability to track progress in other forums and report relevant findings.