

# "Challenges in Modelling Mercury Dynamics Across Atmosphere, Ocean, and Terrestrial Systems"

Joint GMOS-Train and MCHgMAP workshop,

Grand Hotel Bernardin, October 9-11, 2024, in Portorož, Slovenia

## Registration to the meeting

[https://docs.google.com/forms/d/e/1FAIpQLSdnSw-r-zdtDy6b5EyjgmebFIwRIKIrTPnxfxUpwedkqh-KQ/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSdnSw-r-zdtDy6b5EyjgmebFIwRIKIrTPnxfxUpwedkqh-KQ/viewform?usp=sf_link)

## *Draft Agenda*

### **Preamble**

We are delighted to announce the upcoming MCHgMAP coordination meeting, organized by the Meteorological Synthesizing Centre – East (MSC-E) in collaboration with the Jožef Stefan Institute, to be held from October 9-11, 2024, in the picturesque coastal town of Portorož, Slovenia. This meeting is organized in close partnership with the EU GMOS-Train project.

The Multi-Compartment Mercury Modeling and Analysis Project (MCHgMAP) is a recently launched international collaborative initiative aimed at informing the effectiveness evaluations of the Minamata Convention on Mercury and the Convention on Long-Range Transboundary Air Pollution. By leveraging a diverse array of mercury models, MCHgMAP seeks to achieve consistent and comprehensive modeling and analysis of environmental mercury. As the first phase of MCHgMAP experiments on mercury trends progresses, this meeting presents a critical opportunity to review findings, address challenges, and plan the next steps for the project's contributions to the Minamata Convention's effectiveness evaluation.

The objectives of this meeting are multifaceted: to facilitate collaboration among the MCHgMAP modeling groups, engage young scientists from the GMOS-Train project, enhance cross-community cooperation, and ensure the effective exchange of state-of-the-art methodologies in mercury modeling and environmental research.

This gathering is particularly timely, coinciding with the conclusion of the GMOS-Train project in 2024, and offers a unique opportunity for collaboration and the advancement of our collective understanding of mercury dynamics. We look forward to your participation and contributions to this important event.

This agenda is structured to ensure a comprehensive discussion of mercury dynamics across different systems, allowing ample time for presentations, discussions, and collaborative planning. In addition to these sessions, a poster session will be provided to showcase the main outcomes of the GMOS-Train project, offering participants an opportunity to engage with and explore the project's findings in greater detail.

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## Wednesday, 9th October 2024

**09:00 – 10:30**

### **Introduction (Setting the Stage):**

- GMOS-Train (Milena Horvat) and MCHgMAP (Ashu Dastoor) Challenges – 30 min
- Atmospheric Modeling (Oleg Travnikov) – 20 min
- Ocean Modeling (Including Ecosystems) (Johannes Bieser) – 20 min
- Multimedia Modeling (Benjamin Geyman / H el ene Angot – *to be confirmed*) – 20 min

**10:30 – 11:00**

### **Coffee & Tea Break**

**11:00 – 12:45**

### **Emissions & Releases Inventories:**

- EDGAR Inventory (Marilena Muntean) – 20 min
- Future Emission Scenarios (Flora Brocza) – 20 min
- Discussion – 30 min

**12:45 – 14:00**

### **Lunch Break**

**14:00 – 15:30**

### **Focused Sessions:**

- Terrestrial Emissions (Xun Wang / Che-Jen Lin) – 20 min
- Geogenic Emissions, Volcanoes, and Forest Fires (Eric Roy) – 20 min
- Volcanoes and Hydrothermal Vents (Alkuin Koenig, *Natalia Torres Rodriguez – to be confirmed*) – 20 min
- Discussion – 30 min

**15:30 – 16:00**

### **Coffee & Tea Break**

**16:00 – 17:00**

### **Special Topics:**

- Releases: Riverine Input, Input to the Arctic, Coastal Erosion, Groundwater Discharge, Permafrost (*speakers to be confirmed*)

**19:00**

### **Evening: Joint Dinner**

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## Thursday, 10th October 2024

**09:00 – 10:30**

### Measurements:

- Atmospheric Measurements (Hélène Angot and Jan Gačnik – *to be confirmed*) – 10 min each
- Speciation and interconversion of atmospheric mercury (A. Kalizhov) – 10 minutes
- Air-Land Exchange Fluxes (Aryeh Feinberg) – 10 min
- Seawater Concentrations and Fluxes (Anne Soerensen) – 10 min
- Natural Archives (Jane Kirk / Igor Lehnerr/Alexandre Poulain, *to be confirmed*) – 10-20 min
- Discussion of uncertainties – 30 min

**10:30 – 11:00**

### Coffee & Tea Break

**11:00 – 12:30**

### MCHgMAP: Phase I Results:

- GEM-MACH-Hg (Andrei Ryjkov) – 10 min
- GEOS-Chem (Eric Roy) – 10 min
- GLEMOS (Oleg Travnikov) – 10 min
- WACCM (Aryeh Feinberg) – 10 min
- Multi-Model Ensemble, Data Processing, and Evaluation (Oleg Travnikov / Andrei Ryjkov) – 10 min
- Discussion – 40 min

**12:30 – 13:30**

### Lunch Break

**13:30 – 15:00**

### MCHgMAP: Phase I Results (Continued):

- MITgcm (Shaojian Huang / Yanxu Zhang) – 10 min
- ICON-MERCY (Johannes Bieser) – 10 min
- Multi-Model Ensemble, Data Processing, and Evaluation (Johannes Bieser) – 10 min
- GBBM (Benjamin Geyman / Hélène Angot) – 10 min
- WorM (Asif Qureshi, *to be confirmed*) – 10 min
- Discussion – 40 min

**16:00 – 17:00**

### Excursion on a Boat, Dinner

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## **Friday, 11th October 2024**

**09:00 – 10:30**

**Parallel Groups** (*guiding questions are under preparation*):

- Discussion of issues, uncertainties, and Planning next phase simulations
  - Atmosphere
  - Ocean
  - Multimedia

**10:30 – 11:00**

**Coffee & Tea Break**

**11:00 – 12:30**

**Joint Meeting & Discussions:**

- Reporting of Parallel Groups
- Conclusions
- Planning Next Phase Simulations

**12:30 – 13:30**

**Lunch Break**

**15:00**

**End of the Meeting**

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