



*Draft Programme*

**COST-GEOTRACES-GMOS  
International Workshop on**

# **Mercury in the marine environment: a global metrology challenge**

*Chairs: Milena Horvat, Carl Lamborg, Gideon Henderson, Nives Ogrinc*

**Venue:**

**Marine Biological Station, Fornače 41, Piran, Slovenia, 9. - 12. May 2011**



<http://www.mbss.org>

**Day 1: 9. May 2011**

Time		
9:00 – 9:30	<i>Registration and reception</i> <i>National Institute of Biology, Marine Biology Station - MBS, Fornace 4, Piran</i>	
9:30 – 10:40	<i>Welcome and opening remarks</i>	
	COST Action ES0801: The ocean chemistry of bioactive trace elements and paleoclimate proxies	Gideon Henderson
	Global mercury observing system – GMOS WP 3 Over water measurements	Nicola Pirrone Milena Horvat

Time	Title of presentation	Speakers
<i>Session 1:</i> <b>Hg species in the marine environment</b> <i>Chair: F. Fitzgerald</i>		
<b>Global and regional mercury mass balances in the oceans</b>		
10:20 – 10:40	Global mercury mass balance	Rob Mason
10:40 – 11:00	Mass balance in the Mediterranean	Rudi Rajar
11:00 – 11:15	Discussion	
11:15 – 11:30	<i>Coffee break</i>	
<b>Atlantic</b>		
11:30 – 11:50	Northeastern N. Atlantic	C. Hammerschmidt and C. Lamborg
11:50 – 12:10	Mercury Speciation in the open waters of the North and South Atlantic: IOC, CoFeMUG, and FeAST cruise results	C. Lamborg
12:10 – 12:30	Distribution and fluxes of mono & dimethyl mercury on the continental margin of the Northwest Atlantic ocean	William F. Fitzgerald, et al.
12:30 – 13:00	Discussion	
13:00 – 14:30	<i>Lunch</i>	
<b>Other oceans</b>		
14:30 – 14:50	Hg speciation data from the N. Pacific	C. R. Hammerschmidt
14:50 - 15:10	Mercury in the South Atlantic and South Indian Oceans	Melanie L.I. Witt
15:10 – 15:30	Revisiting the marine mercury cycle: Speciation and stable isotopes	Lars-Eric Heimburger
15:30 – 15:50	Results from the Galathea circum navigation	H. Skov
15:50 – 16:00	Discussion	
16:00 – 16:30	<i>Coffee break</i>	
<b>Arctic's and Antarctic</b>		
16:30 – 16:50	Antarctic Ocean waters	Daniel Cossa
16:50 – 17:10	Recent measurements - Antarctica	Katarina Garfeldt
17:10 – 18:00	Discussion and wrap up of the first day	

**19:00** *Welcome reception and dinner, MBS hall*

**Day 2: 10. May 2011**

<b>Time</b>	<b>Title of presentation</b>	<b>Speakers</b>
<b>Mediterranean open and coastal waters</b>		
9:00 – 9:20	Atmospheric mercury species and continuous analysis of Dissolved Gaseous Mercury concentrations in the Mediterranean Natural waters	Francesca Sprovieri et al.
9:20 - 9:40	Mercury in the open and coastal environment	Milena Horvat
9:40 – 10:00	Mercury in the Adriatic sea	Jože Kotnik
10:00 – 10:30	Discussion	
10:30 – 11:00	<i>Coffee break</i>	
<i>Session 2:</i>		
<b>What to measure and why?</b>		
<i>Chair: M. Horvat</i>		
<b>Setting the quality objectives</b>		
11:00 – 11:20	Formulation of model demands to over-water mercury measurements	Oleg Travnikov
11:20 – 11:40	Quantifying the air-sea exchange of mercury: Methods and modeling	Robert. Mason
11:40 – 12:30	Discussion	
12:30 – 14:00	<i>Lunch</i>	
<b>Mercury evasion</b>		
14:00 – 14:20	Experience from various ocean cruises	Katarina Gardfieldt
14:20 – 14:40	Organic mercury species in the Arctic lower atmosphere over open water	Holger Hintelmann
14:40 - 15:00	Technique allowing continuous automatic measurements of DGM in oceanic surface water	Ingvar Wangberg
15:00 – 15:30	Discussion	
15:30 – 16:00	<i>Coffe break</i>	
<b>Hg at the sediment water interface in the marine environment</b>		
16:00 – 16:20	Relation between mercury speciation at sediment/water interface and mercury flux to water column	Jacek Bełdowski et al.
16:20 – 16:40	Mediterranean deep and coastal waters	Nives Ogrinc
<b>Hg interaction with the DOC in the marine environment</b>		
16:40 – 17:00	DOC and Hg in the Gulf of Trieste	Jadran Faganeli
17:00 – 17:20	Discussion and wrap up of the second day	

**18:00**      *Field trip on the boat*

**Day 3: 11. May 2011**

<b>Novel techniques: Hg isotope fractionation, tracer techniques</b>		
9:00 – 9:20	Development and use of the passive samplers (DGT)	Martine Leermakers
9:20 – 9:40	Precise Hg isotope ratio measurements in marine environment	Holger Hintelmann
9:40 – 10:00	Stable isotopes applications and use	Jeroen E. Sonke
10:00 – 10:20	The use of radiotracer techniques	Sergio Ribeiro Guevarra et al.
10:20 – 10:40	Discussion	
10:40 – 11:00	<i>Coffe break</i>	
<i>Session 3:</i>		
<b>Metrological support</b>		
<i>Chair: C. Lamborg</i>		
11:00 – 11:20	Metrology and isotopic tools for Hg reference measurements	Christophe Quetel
11:20 – 11:40	EMRP project on mercury	Milena Horvat
11:40 – 12:00	Discussion	
12:00 – 13:00	<i>Lunch</i>	
<b>Recent improvements of the protocols for Hg speciation</b>		
13:00 – 13:20	A new extraction technique for MMHg in seawater	Chad Hammersmidt
13:20 – 13:40	A new bottle material/cleaning methods paper for total Hg in seawater	Chad Hammersmidt
13:40 – 14:00	The recent GEOTRACES Hg Speciation Methods Development and Intercalibration	C. Lamborg
14:00 – 14:30	Discussion	
15:30 – 16:00	<i>Coffee Break</i>	
<b>Intercomparisons: past and future</b>		
<b>Experience from on going and past intercomparisons</b>		
16:00 – 16:20	Results from the recent intercomparison	Joel Creswell
16:20 – 16:40	Finnish experience (Syke)	Teemu Naykki
16:40 – 17:00	Mediterranean experience	Milena Horvat
<b>Future intercomparisons</b>		
17:00 – 17:20	The Next Step	C. Lamborg
17:20 – 18:30	Discussion	

**19:00**      **Workshop dinner – "Barka" Restaurant**

**Day 4: 12. May 2011**

Session 4 <b>Available instrumentation and demonstrations*</b> <i>Chair: N. Ogrinc</i>		
9:00 – 12:30		
	Tekran - real-time DGM measurements in the ocean	E. Prestbo
	Lumex	N. Mashyanov
	Brooks Rand	Joel Creswell
12:30 – 14:00	Lunch	

**\*On-site demonstrations are possible depending on the willingness of instrument producers to demonstrate latest development and/or participants to demonstrate their sampling and analysis systems.**

**Note. In the afternoon a meeting on GMOS aircraft measurements will commence.**