

HYPOX 2nd ANNUAL MEETING



Horw, Switzerland
Faculty of Technology and Architecture

Monday, 02.05.2011

19:00 Welcoming reception

Unterlachenhof, Tribtschenstrasse 20, Lucerne; www.unterlachenhof.ch

Tuesday, 03.05.2011

09:00 Welcoming note. *Antje Boetius, MPI*

09:10 – 12:35 *Tuesday morning session*

Highlights from observatory work and field campaigns (I): “Open and Coastal seas”

09:10 *Gotland Basin. Three years of IFM-GEOMAR & UGOT field trips to the central Baltic Sea (I): fluxes of nitrogen, phosphorous, oxygen and silicate across the benthic boundary layer. Stefan Sommer, Tanja Schorp, Dan McGinnis, Victoria Bertics, Andy Dale, Olaf Pfannkuche IFM-GEOMAR. (15 min, discussion after the next talk)*

09:25 *Gotland Basin. Three years of IFM-GEOMAR & UGOT field trips to the central Baltic Sea (II): benthic recycling of carbon and other biogenic elements on oxic, hypoxic and anoxic bottoms. Per Hall, Mikhail Kononets, Madeleine Nilsson, Lena Viktorsson et al. UGOT. (20 min & 15 min discussion)*

10:00 *Romanian Shelf. Ecosystem recovery after two decades of reduced nutrient input: Continuous recordings from a hot summer at the Romanian Shelf. Jana Friedrich AWI. (15 min, discussion after the next talk)*

10:15 *Romanian Shelf. Studying the Romanian Shelf benthic community in HYPOX: ecosystem recovery trends vs. fish kill events. Marian-T. Gomoiu, Adrian Teaca GeoEcoMar. (15 min & 15 min discussion)*

10:45 *Coffee break*

11:10 *Crimean Shelf. Oxygen dynamics at the Crimean Shelf: monitoring results and effects on benthic biogeochemistry and microbial diversity. Gerdhard Jessen & Anna Lichtschlag MPI, Nadia Lo Bue INGV (25 min & 10 min discussion)*

11:45 *Crimean shelf & Bosphorus area. Benthic meiofauna life and depth distribution in hypoxic habitats: new findings. Nelli Sergeeva & Sonya Mazlumyan IBSS. (15 min & 10 min discussion)*

12:10 *Bosphorus area. Deep oxygen intrusion by the Bosphorus plume stimulates sulfide oxidation coupled to autotrophic denitrification in Black Sea anoxic layers. Gaute Lavik & Moritz Holtappels MPI, Ulrich Struck MfN. (15 min & 10 min discussion)*

12:35 *Lunch break at the campus canteen*

- 14:05 – 17:10 *Tuesday afternoon sessions*
Highlights from observatory work and field campaigns (I): “Open and Coastal seas” & (II) “Land-locked water bodies”
- 14:05 *Bosporus area (and beyond)*. Basin history and past oxygen availability in the Black Sea: new findings from x-ray core scanning. Namik Çagatay & Zeynep Erdem ITU-EMCOL. (15 min & 10 min discussion)
- 14:30 *Swiss lakes & Ionian Sea lagoons*. Reading the oxygen chapter in sediment and water body records: highlights from biomarker, Noble gas and data analysis from Lake Rotsee, Lake Zürich and other sites (including Amvrakikos Gulf, Greece).. *Sebastian Naeher, Ryan North & Carsten Schubert Eawag*. (20 min & 10 min discussion)
- 15:00 *Ionian Sea lagoons & embayments*. Tracing oxygen and gas seepages in the Amvrakikos Gulf and Aetoliko lagoon: two years of HYPOX investigations. George Papatheodorou UPAT & *Giuseppe Etiop* INGV. (15 min, discussion after the next talk)
- 15:10 *Ionian Sea lagoons & embayments*. Oxygen distribution in Katakolo bay: monitoring results and the connection to gas seepage. Giuseppe Etiop & *Giuditta Marinaro* INGV, *George Papatheodorou* UPAT (*confirmed*). (15 min & 15 min discussion)
- 15:45 *Coffee break*
- 16:15 *Loch Etive*. Exchange vs. oxygen consumption in Loch Etive: too much demand or too little supply? *Henrik Stahl* SAMS. (20 min & 10 min discussion)
- 16:45 *Swedish fjords*. Oxygen observations in Koljoe and Havstens Fjord: Findings from first time series and progress towards a cabled observatory. *Per Hall & Anders Tengberg* UGOT. (15 min & 10 min discussion)
- 17:10 – 17:30 *Open implementation committee meeting*
- 17:10 *HYPOX observatory status*. Feedback from the Implementation Committee with short discussion. Chairs: *Henrik Stahl* SAMS & *Gilles Lericolais* Ifremer. (20 min)
- 17:30 *End of Tuesday’s plenary session.*
Return to Lucerne, dinner individually organized
- 17:30 – open end: *MERIAN MSM 15/1 post-cruise meeting*
 Meeting for participants of and scientists involved in last year’s MERIAN Black Sea cruise. Open discussion on related issues (e.g., data analysis and publication planning). Chair: *Antje Boetius* MPI

Wednesday, 04.05.2011

09:00 – 12:30 *Wednesday morning sessions*

HYPOX innovations: technical developments in HYPOX & WP1 & WP 3 status and tasks.

- 09:00 Stable nitrogen isotopes in oxic and anoxic environments: present and past. *Ulrich Struck, MfN.* (15 min & 5 min discussion)
- 09:20 Take a look at the fast side: monitoring rapid oxygen oscillations in the water column and in sediments with a novel multi-sensor optode. *Jan Fischer MPI.* (15 min & 5 min discussion)
- 09:40 The autonomous profiling observatory GODESS: introduction to the technology and examples of results obtained so far. *Ralf Prien IOW.* (15 min & 5 min discussion)
- 10:00 Interpretation of O₂ fluxes measured by eddy correlation. A model study. *Moritz Holtappels & Arzhang Khalili MPI.* (15 min & 5 min discussion)
- 10:20 Coffee break
- 10:50 *WP 1 status and tasks.* Towards recommendations for future oxygen observatories: achievements in monitoring and quality control and necessary improvements after two years of HYPOX (with reference to D1.3). *Giuditta Marinaro INGV.* (20 min & 20 min discussion)
- 11:30 *WP 3 status and tasks.* Talks and discussions on workpackage status and tasks with reference to D3.1, 3.2, and 3.4 and links to EU project CLAMER. *More detailed planning will follow soon. Presenters and chairs: Jana Friedrich AWI, Per Hall UGOT, Filip Meysman NIOO KNAW.* (60 min talks and discussion)
- 12:30 Lunch break at the campus canteen
- 12:30 – 17:30 *Wednesday afternoon sessions*
- HYPOX web representation, data portal & connection to GEOSS : opulent data sets appetizingly served*
- Future of HYPOX: science and funding*
- 14:00 Improving the HYPOX data portal: integration of data from cabled observatories (Loch Etive, Koljofjord) and new tools for data search and visualization. *Andree Behnken & Robert Huber Uni-HB.* (20 min & 5 min discussion)
- 14:25 Data submission and representation in the HYPOX data portal: discussion on status and remaining tasks. *Chairs: Andree Beenken Uni-HB & Antje Boetius MPI* (20 min).
- 14:45 Feeding Data and Information into GEOSS for mutual benefit. *Christoph Waldmann Uni-HB.* (20 min & 5 min discussion).
- 15:10 Matching HYPOX aims with the new GEO Workplan - discussion on how to optimize observation strategies and provide continuous information on marine ecosystems. *Chairs: Christoph Waldmann Uni-HB, Jana Friedrich AWI & Felix Janssen MPI.* (20 min).
- 15:30 Coffee break

- 16:00 *HYPOX science perspectives*. The more you know the more questions you have: some random examples of future tasks in hypoxia science. Stefan Sommer IFM-GEOMAR. (10 min & 10 min discussion)
- 16:20 *Funding perspectives*. Expected calls on Earth Observation and Instrumentation in FP7. Jane Shiel, EC, DG Research / Environment *not yet confirmed* (15 min & 10 min discussion).
- 16:45 Open discussion on future scientific topics, funding, and proposal writing. Chairs: *Stefan Sommer & Olaf Pfannkuche IFM-GEOMAR, Antje Boetius MPI* (45 min).
- 17:30 *End of Wednesday's plenary session.*
Travel to Kastanienbaum (public transportation and short walk)
- 19:00 Barbecue at Eawag's Kastanienbaum branch.

DRAFT VERSION

Thursday, 05.05.2011

09:00 – 12:30 *Thursday morning session*

Extending HYPOX knowledge: Data assimilation and modeling

- 09:00 *Black Sea modeling.* Supporting Modeling of Black Sea oceanography and oxygen distribution by assimilation of float data: The data assimilation approach. Emil Stanev & Yunchang He HZG. (15 min & 5 min discussion).
- 09:20 *Black Sea modeling.* 3D biogeochemical modeling of Black Sea oxygen cycling. Arthur Capet MARE-ULg. (15 min & 5 min discussion).
- 09:40 *Water column oxic/anoxic interface modeling.* Modeling and hypoxia-related investigations at NIVA and connection to HYPOX tasks. Evgeniy Yakushev NIVA. (15 min & 5 min discussion).
- 10:00 *Baltic Sea modeling.* Benthic nitrogen cycling in Eckerfoerde Bay: current trends and long-term perspectives. Andy Dale IFM-GEOMAR. (15 min & 5 min discussion).
- 10:20 *Coffee break*
- 10:50 *Fjord modeling.* Status and future of Loch Etive 3D modelling: from realistic hydro-dynamics to oxygen reconstruction. Dmitry Alevnik SAMS. (15 min & 5 min discussion).
- 11:10 *Fjord modeling.* Modeling sensitivity towards global change: a model perspective on the Koljoe Fjord in a changing environment. Daniel Hansson, UGOT (15 min & 5 min discussion).
- 11:30 *Vertical mixing in hypoxic basins and its dependence on atmospheric and marine boundary conditions (with reference to D 2.3).* Anders Stigebrandt, UGOT (15 min & 5 min discussion).
- 11:50 *WP 2 status and tasks.* HYPOX modeling status and tasks for the last year (with reference to D2.1, 2.3, 2.4 & 2.5). *Presenters and chairs:* Emil Stanev HZG & Filip Meysman NIOO-KNAW. (10 min & 15 min discussion).
- 12:15 *Meeting wrap up.* Concluding remarks. Antje Boetius MPI. (15 min).

12:30 *Lunch break at the campus canteen*

End of the plenary part of the meeting.

12:30 to 14:30

Steering committee meeting over lunch (only WP leaders).

Chair: Antje Boetius MPI

Start of the topical session on oxygen sensing technology and applications

14:30 -17:30 *Thursday afternoon session*

Oxygen sensing workshop (I): Sensor technology presentations

- 14:30 *Seabird sensors & applications.* *N.N., Sea-Bird Electronics Inc., Bellevue, WA, USA (not yet confirmed).* (15 min & 15 min discussion).
- 15:00 *Unisense sensors & modifications incl. the STOX sensor for trace level oxygen measurements.* Thomas Rattenborg Unisense A/S, Aarhus, Denmark. (15 min & 15 min discussion).

- 15:30 Optical O2 measuring methods developed at PreSens. *Christian Huber PreSens, Regensburg, Germany & Anders Tengberg UGOT*. (15 min & 15 min discussion).
- 16:00 Coffee break
- 16:30 The fast Rinko optode: a new optical dissolved oxygen sensor. *Koji Ochi JFE Advantech, Kobe, Japan*. (15 min & 15 min discussion).
- 17:00 Aanderaa Data Instruments' optodes & applications. *Jostein Hovdenes & Anders Tengberg, Aanderaa Data Instruments, Bergen, Norway*. (15 min & 15 min discussion).
- 17:30 -19:00 *Thursday afternoon session*
Oxygen sensing workshop (II): Sensor technology poster session with Beer and Pretzel
Sensor technology poster session, informal gathering and discussions (90 min)
- 19:00 End of Thursday's sessions.
- Return to Lucerne, dinner individually organized

Friday, 06.05.2011

09:00 – 12:30 *Friday morning session*

Oxygen sensing workshop (III): scientific applications

09:00 *Keynote lecture.* Marine environment in change: experiences learned from 15 years of environmental monitoring in the Oeresund Strait (Baltic Sea).

P. Goransson & M. Karlsson, Municipality of Helsingborg, Anders Tengberg UGOT. (15 min & 7 min discussion)

09:22 Oxygen sensor multi level calibration bath at Ifremer. *Florence Salvetat.* (15 min & 7 min discussion).

09:45 Oxygen sensor calibration efforts in HYPOX: towards an (almost) simple procedure to improve observation quality. *Felix Janssen, Jan Fischer, Moritz Holtappels, Anna Lichtschlag MPI, & Mikhail Kononets UGOT.* (15 min & 7 min discussion).

10:07 A close look at optode performance in the test basin at Ifremer. *Nadia Lo Bue INGV & Laurent Delauney Ifremer.* (15 min & 7 min discussion).

10:30 *Coffee break*

11:00 Long-term oxygen monitoring at HAUSGARTEN - What can we say about small changes? *Frank Wenzhöfer & Thomas Soltwedel AWI, Anders Tengberg UGOT.* (15 min & 7 min discussion).

11:22 Fighting back: antifouling technologies developed at Ifremer. *Laurent Delauney Ifremer.* (15 min & 7 min discussion).

11:45 This is the end: Resolving submicromolar oxygen gradients in the watercolumn using trace-optodes and amperometric microsensors with high signal amplification. *Mathias Kirf Eawag.* (15 min & 7 min discussion).

12:07 Approaches to assess sediment oxygen dynamics. *Ronnie Glud SAMS / USD.* (15 min & 7 min discussion).

12:30 *Continuation of Discussions over Lunch at the campus canteen*

End of the plenary part of the meeting.

Additional meetings in split groups may be scheduled for the afternoon if needed (cruise organization, WP meetings, discussion of cooperations etc.)

please organize individually