



Universitat de les
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Announcement of the first workshop on

MED-MaHb: The Mediterranean Sea mass and heat budget: Understanding its forcing, uncertainties and time evolution.

Convenors: Karina von Schuckmann (karina.von-schuckmann@univ-tln.fr),
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Support from [MISTRALS/ENVIMED programme*](#), France and IMEDEA, Spain

9.-10. October 2014 at IMEDEA, Mallorca, Spain

**programme partners:* Thomas Arsouze, Abderahim Bentamy, Jonathan Beuvier, Isaac Gertman, Mathieu Hamon, Rainer Hollmann, Sana Ben Ismail, Simon Josey, Jesus Garcia Lafuente, Jean-François Legeais, Wolfgang Ludwig, Benoit Meyssignac, Giulio Notarstefano, Pierre-Marie Poulain, Marie-Isabelle Pujol, Nicolas Reul, Gilles Reverdin, Samuel Somot, Emil Stanev, Isabelle Taupier-Letage, Bruno Zakardjian

Abstract submission (email to conveners) deadline: 01.08.2014

Summary:

Individual estimates (observational or numerical) of the different components of the Mediterranean Sea heat and mass budget are subject to large uncertainties. These include the ocean heat and freshwater content, the heat and freshwater exchanges with the atmosphere through the sea surface, lateral exchanges through the Strait of Gibraltar, the Dardanelles Strait and the river runoff. The principal objective of this project is to re-evaluate the mass and heat budgets of the Mediterranean Sea by assessing the consistency and uncertainty of its different components from different approaches (in situ measurements, remote sensing, ocean synthesis, reanalysis

products and coupled models) to further understand its forcings and to analyze its time evolution. A joint analysis of the different components merging information from different sources could potentially lead to a significant improvement of the knowledge of the system as a whole. This initiative contributes to the MISTRAL/HYMEX project (www.hymex.org), and follows the objectives of the 6th CLIVAR research opportunity (<http://www.clivar.org/science/clivar-research-foci#six>), MedCLIVAR (www.medclivar.eu) and MedCORDEX (www.medcordex.eu).

Description:

The goal of this workshop is to encourage discussions and strengthen high-level international scientific cooperation on the assessment of the mass and heat budgets of the Mediterranean Sea from in situ and remote sensing measurements, sea level re-constructions, ocean synthesis, reanalyses products and coupled ocean-atmosphere models.

The workshop will take place during 2 days. The first day will be devoted to the quantification of the different components of the Mediterranean heat and mass budget with special emphasis on the associated uncertainties. The second day will be devoted to the physical mechanisms behind the time variability of each component. A discussion session during the afternoon of the second day is thought to define strategies and recommendation to develop:

- Refinement of a scientific framework on Mediterranean Sea heat budget studies
- The evaluation of existing data sets and information products and their consistency
- Recommendations on how to improve the observing systems and derived information products, assimilation methods, ocean and climate models and surface fluxes
- Contributing insights to current uncertainties of Mediterranean Sea heat budget constraints, as well as to its forcing mechanisms and time evolution at seasonal, interannual and decadal periods due to natural and anthropogenic climate variability.

The number of participants will be limited due to organization issues. Those interested in attending are kindly requested to send an e-mail with an expressions of interest. The participants willing to show their work are invited to submit an abstract (deadline 01.08.2014). A poster session will be organized and enough time will be devoted to show and discuss the posters.

Preliminary Agenda:

1st Day: Thursday 9th October 2014

General Introductions:

09:00 – 09:30 Inscription

09:30 - 09:45: Welcome and introduction (G. Jorda)

09:45 – 10:15: The **Mediterranean Sea mass and heat budget**: Understanding its forcing, uncertainties and time evolution: **MED-MaHb** (K. von Schuckmann)

Session 1: Mass and heat exchange through ocean-atmosphere interactions from remote sensing, in situ measurements, reanalyses and ocean synthesis. Chair: S. Josey or Abderahim Bentamy

10:15 – 10:45: Surface heat and water fluxes in the Mediterranean Sea (S. Josey, A. Bentamy, R. Hollmann)

10:45 – 11:15: Coffee break

11:15 – 12:15: Discussion on session I

Session II: Mass and heat exchange at the straits of Gibraltar and the Black Sea, and through river runoff from in situ measurements and ocean syntheses. Chair: Jesus Garcia Lafuente

12:15 – 12:45: The Black Sea contribution to the Mediterranean Sea (E. Stanev, E. Ozsoy)

12:45 – 13:15: The contribution of Rivers to the Mediterranean Sea heat and mass budget (R. Ludwig)

13:15 – 15:00 Lunch Break

15:00 – 15:30: Fluxes of heat and mass through the Strait of Gibraltar (Jesús García-Lafuente)

15:30 – 16:00 min.: Discussion on session II

Session III: Mediterranean Sea heat content, freshwater content and sea level changes from in situ data, remote sensing and ocean syntheses. Chair: Pierre-Marie Poulain

16:00 – 16:40: Ocean Heat and Mass budget (G. Jorda, K. von Schuckmann, P.-M. Poulain, M.-I. Pujol, J. Beuvier, S. Somot)

16:40 – 17:40 Discussion on session III

17:40 – 18:30 : Poster viewing

2nd Day: Friday 10th October 2014

09:00 – 09:30: Mediterranean Sea in climate change and variability, and variations of the mass and heat budget (P. Lionello, K. von Schuckmann, E. Ozsoy, I. Geertman)

Session IV: Physical processes behind the variability of the components: Chair: Isaac Gertman

09:30 – 10:00: Forcing of variability in the Gibraltar heat and water fluxes (TbD)

10:00 – 10:30: Forcing of variability in the Surface Heat Flux (TbD)

10:30 – 11:00: Forcing of variability in the Surface Water Flux (TbD)

11:00 – 11:30: Coffee break

11:30 – 12:00: Forcing of variability in the Black Sea (E. Stanev, E. Ozsoy)

12:00 – 12:30: Forcing of variability in the River runoff (W. Ludwig)

12:30 – 13h30 Poster viewing

13:30 – 15:30: Lunch break

15:30 – 18:00: Final discussion

18:00 End of workshop