

Observing and understanding the Atlantic Meridional Overturning Circulation (AMOC)

Organizing committee: Pascale Lherminier, Didier Swingedouw and Frédérique Eynaud
Brest, 3-5th of May 2017

Wednesday 3rd of May

- 9:00 - 10:00 Registration and coffee
- 10:00-10:15 Welcome from IUEM (Anne-Marie Treguier)
- 10:15-10:30 Presentation of the meeting: Pascale Lherminier and Didier Swingedouw

1. Instrumental observations of the AMOC (chair: Pascale Lherminier & Patricia Zunino)

- 10:30 - 11:00 **Herlé Mercier:** OVIDE-A25, a biennial hydrographic transect across the North Atlantic Subpolar Gyre since 2002: Overview of the main scientific findings about the variability of the meridional overturning circulation and its impact on the CO₂ physical pump
- 11:00 - 11:20 Alain Colin de Verdière: Calculation of the mean Atlantic Meridional Overturning Circulation with Argo floats and temperature-salinity data
- 11:20 - 11:40 Robin Waldman: Comparison of conditions of oceanic deep convection between the Irminger and Northwestern Mediterranean Seas
- 11:40 - 12:10 **Gerard McCarthy:** AMOC variability from decades to multi-decades
- 12:10 - 12:30 Andrew Friedman: Investigating a new record of Atlantic sea surface salinity from 1896–2013
- 12:30 - 14:10 Lunch break and poster session 1
- 14:10 – 14:30 Lidia Carracedo: AMOC-driven nutrient flux variability across the RAPID-26N section
- 14:30 - 15:00 Discussion ending session 1

2. Paleo-climatic reconstructions of the AMOC (Chair: Laurence Vidal & Aurélie Penaud)

- 15:00 - 15:30 **Claire Waelbroeck:** Reconstructing the dynamics of Atlantic Meridional Overturning Circulation changes over the last 40 ky
- 15:30 - 15:50 Meryem Mojtahid: Do benthic foraminifera and their geochemical signature from the Celtic margin differentiate the effects of European

	and Laurentide Ice Sheets meltwaters on the AMOC across Termination 1?
15:50-16:10	Frédérique Eynaud: The Bay of Biscay: a key spot for past AMOC reconstructions
16:10 - 17:00	Coffee break and poster session 2
17:00 - 17:30	Aline Govin: Dynamics of North Atlantic deep currents from the onset to the demise of the Last Interglacial period (145-110 ka)
17:30 - 17:50	Mélanie Wary: Regional seesaw between North Atlantic and Nordic Seas during the last glacial abrupt climatic events
17:50 - 18:20	Discussion ending session 2

Thursday 4th of May

3. Drivers of the AMOC: Theoretical approaches (chair: Alain Colin de Verdière & Olivier Arzel)

8:30 - 9:00	Rémi Tailleux: On the buoyancy-driven theory of the Atlantic Meridional Overturning Circulation
9:00 - 9:20	Olivier Arzel: Determination of diapycnal mixing rates in the world ocean from a T/S climatology
9:20 - 9:50	Thierry Huck: Oceanic control of multidecadal variability in the North Atlantic
9:50 - 10:10	Florian Sévellec: Arctic climate change driving a decline in the Atlantic Meridional Overturning Circulation
10:10 - 10:50	Coffee break
10:50 - 11:20	Discussion ending session 3

4. Lessons from numerical modelling of the ocean and climate for the AMOC dynamics (chair: Claude Talandier & Anne Marie-Tréguier)

11:20 - 11:50	Claus Böning: Mechanisms of seasonal to decadal AMOC variability
11:50 - 12:10	Clotilde Dubois: The Atlantic Meridional Overturning in the ocean reanalysis
12:10 - 12:30	Didier Swingedouw: Impact of freshwater release in the Mediterranean Sea on the AMOC
12:30 - 14:00	Lunch break

- 14:00 - 14:30 **Eric Chassignet:** Atlantic meridional overturning circulation variability in forced versus coupled simulations
- 14:30 - 14:50 Thierry Penduff: Intrinsic and atmospherically-forced variability of the AMOC: insights from a large ensemble ocean hindcast
- 14:50 - 15:10 Camille Lique: Potential for deep convection in the Arctic Basin under a warming climate and contribution to the AMOC
- 15:10 - 15:40 Discussion ending session 4
- 15:40 - 16:30 Coffee break

5. Climatic impact and implications of AMOC variations (chair: Didier Swingedouw & Frédérique Eynaud)

- 16:30 - 17:00 **Juliette Mignot:** AMOC variability and predictability in climate models
- 17:00 - 17:20 Yohan Ruprich-Robert: Impacts of the Atlantic Multidecadal Variability on the tropical climate and tropical cyclone activity
- 17:20 - 17:40 Matthew Menary: An anatomy of the projected North Atlantic warming hole in CMIP5 models
- 18:00 Departure for the dinner meeting at Oceanopolis

Friday 5th of May

- 9:00 - 9:30 **Leon Hermanson:** Predicting the high latitude AMOC and its impacts
- 9:30 - 9:50 Guillaume Gastineau: Role of ocean-atmosphere coupling for AMOC decadal variability
- 9:50 - 10:10 Claude Frankignoul: On the wintertime atmospheric response to the AMOC variability
- 10:10 - 10:30 Gwendal Rivière: The impact of the Pacific Decadal Oscillation and the Atlantic Multidecadal Oscillation onto the Northern Hemisphere storm tracks during the Twentieth Century
- 10:30 - 11:00 Coffee break
- 11:00 - 11:20 Martin Menegoz: Modulation of the climate response to a volcanic eruption by the Atlantic Multidecadal Variability
- 11:20 - 11:50 Discussion ending session 5
- 11:50 - 12:30 General discussion and conclusions closing the meeting
- 12:30 - 14:30 Lunch and poster session 5
- 14:30 End of the meeting