

APO Workshop Agenda, Scripps Institution of Oceanography, 18-20 Sept 2015, Room 100 Vaughan Hall

Friday, 18 Sept.

- 8:30 Registration
- 9:00 Opening Remarks
- 9:15 Mark Battle Zonal APO Gradients in the Equatorial Pacific
- 9:40 Yasunori Tohjima Spatiotemporal variability in APO in the western Pacific region observed from the NIES's observing network
- 10:05 Yassir Eddebbbar ENSO-driven variability of air-sea fluxes of oxygen: Observations and mechanisms
- 10:30 **Break**
- 10:50 Britton Stephens Global scale airborne and ship based observations of atmospheric potential oxygen
- 11:15 Cynthia Nevison Evaluating CMIP5 ocean biogeochemistry and Southern Ocean carbon uptake using APO: Present day performance and future prediction
- 11:40 Shinji Morimoto Temporal variations of $\delta(O_2/N_2)$ and Atmospheric Potential Oxygen (APO) observed at Syowa Station, Antarctica.
- 12:05 **Lunch Break**
- 13:15 Shigeyuki Ishidoya Time and space variations of Atmospheric Potential Oxygen over the Western Pacific observed by using a cargo aircraft C-130H
- 13:35 Sara Mikaloff-Fletcher Oxygen gradients across the Pacific Ocean: Resolving an apparent discrepancy between atmospheric and ocean observations and models
- 14:00 Laure Resplandy Constraints on meridional oceanic heat transport from combined measurements of atmospheric potential oxygen
- 14:25 **Break**
- 14:45 Keith Rodgers Sensitivity of the seasonal and intraseasonal variations of APO over the Southern Ocean to wind stirring
- 15:10 Christian Rödenbeck Using atmospheric O_2/N_2 data to estimate the variability of ocean biogeochemistry
- 15:35 Andrew Manning The "GOLLUM" O_2 intercomparison programme: Latest results and next steps
- 16:00 **Break**
- 16:10 **Discussion: Data merging**
- 17:00 **Drinks and heavy appetizers at Surfside**

Saturday, 19 Sept.

- 9:00 Gordon Brailsford Atmospheric oxygen observations from New Zealand
- 9:20 Sander van der Laan Is climate change affecting the biotic pump of the Pacific Ocean?
- 9:45 Valerie Livina Tipping point analysis of atmospheric oxygen concentration
- 10:10 **Break**
- 10:30 Thomas Barningham A preliminary investigation into the detection and attribution of carbon cycle processes from APO observations at Baring Head, New Zealand
- 10:55 Daisuke Goto Continuous measurements of APO at Ny-Ålesund, Svalbard
- 11:20 **Discussion: Observational needs and opportunities**
- 12:10 **Lunch Break**
- 13:10 Jonathan Bent Assessing ocean biogeochemical models with high-resolution airborne observations of atmospheric oxygen over the Southern Ocean

- 13:35 Manfredi Manizza Testing ocean biogeochemical models with atmospheric potential oxygen (APO) and Ar/N₂ ratio
- 14:00 Charlotte van Leeuwen Continuous and flask observations of atmospheric δO₂/N₂ and CO₂ at Lutjewad station, the Netherlands, and Mace Head station, Ireland
- 14:20 Penelope Pickers First continuous shipboard measurements of atmospheric O₂, CO₂ and APO from meridional Atlantic Ocean transects
- 14:35 Break
- 14:55 Roberta Hamme Semi-continuous measurements of Ar/N₂, O₂/N₂, and CO₂ at the Scripps pier
- 15:20 Markus Leuenberger APO variations in Central Europe obtained at the Jungfrauoch Research Station, Switzerland in comparison to a combined record of Scripps La Jolla and Alert values
- 15:45 Lingxi Zhou Determination of the changes in atmospheric Ar/O₂ and O₂/N₂ by using GC-TCD
- 16:10 Break
- 16:20 **Discussion: Modelling needs and opportunities**
- 17:00 End

Sunday, 20 Sept

- 9:00 Ralph Keeling Grand challenges for atmospheric O₂/N₂ and Ar/N₂ measurements
- 9:25 Prabir Patra Can O₂/N₂ measurements help to constrain global total fossil fuel emission?
- 9:50 Penelope Pickers Quantifying fossil fuel CO₂ from continuous measurements of APO: a novel approach
- 10:15 Charlotte van Leeuwen Detection of CO₂ leaks from Carbon Capture and Storage (CCS) sites with combined atmospheric CO₂ and O₂ measurements
- 10:40 Break
- 10:55 **Discussion: Open**
- 12:00 Workshop end