

UK CLIVAR National Report

First Primarily observational activities focussed mostly in the Southern Ocean

- DIMES (the Diapycnal and Isopycnal Experiment in the Southern Ocean), a CLIVAR-sponsored US-UK consortium to investigate mixing processes in the Southern Ocean, is entering its concluding phase. University of Southampton leads the UK component, with BAS, NOC, UEA and SAMS participation.
- There are several observational programmes underway or planned addressing climatic changes in AABW in the Atlantic sector and its underpinning processes (e.g., ANDREX, BAS mooring array in the Orkney Passage), with University of Southampton, BAS, UEA and NOC participation.
- There are also several observational programmes underway or planned targeting shelf-ocean exchange around Antarctica and the Antarctic ice sheet stability, focussed on the northwestern Weddell Sea and the Amundsen Sea Embayment (moorings, gliders, ship-board surveys and Autosub). The most prominent of these efforts is the NERC iSTAR programme, with UEA, BAS and University of Southampton participation.
- Simon Josey (NOC) and colleagues are working on the evaluation of air-sea flux products using the first air-sea flux buoy deployed in the Southern Ocean south of Tasmania by Australian scientists.
- Several modelling efforts are underway at NOC, BAS and University of Southampton (Sallee, Nurser, Zika et al.) to evaluate CMIP5 models using a range of new techniques (such as overturning in T-S space).
- The NERC OSMOSIS programme is addressing the role of a range of physical processes currently not considered in climate-scale ocean models (Langmuir turbulence, resonant wind forcing of inertial motions, submesoscale dynamics) in setting the properties of the mixed layer. The programme has deployed a cluster of moorings and gliders in the NE Atlantic to measure these processes, and is working on developing a Langmuir parameterizations. Led by Reading, Southampton and Bangor, with UEA, NOC, Met Office, ECMWF participation.

NOC have submitted material towards three CORE-2 inter-comparison papers. George Nurser has attended meetings of the WGOMD in January 2012 and February 2013

Keith Haines as GSOP Co-chair was joint organiser of a workshop on Air-sea fluxes and Ocean synthesis intercomparisons, held at Woods Hole 27-30 Nov 2012. This was supported by WCRP, NOAA, NASA and US-CLIVAR. The report is in final stages of completion.

A GSOP 6 panel meeting took place on 30th Nov- 1st December 2012 following the WHOI workshop chaired by Keith Haines.

A follow up Ocean synthesis intercomparison meeting is planned to take place at ECMWF in July 1-3 2013 with a possible additional follow up in November at the GODAE international

meeting. The COST program below will provide some funding for further meetings if successful

An ESF COST project has been submitted on ocean synthesis intercomparison to set up a Network, including the GSOP project officer Nico Caltabiano. This was initially lead from the UK but the final project is now lead form Belgium with strong UK participation. This will support European scientists plus some identified outside experts.

An ESA Support to Science Element (STSE) program www.esa.int/stse is being spun up to support ocean surface flux and the earth energy budget projects with strong support from CLIVAR and GSOP. It will be explicitly labelled as supporting CLIVAR goals in this area.

I think Andrew Turner should be gathering more Atmospherically focussed UK contributions