

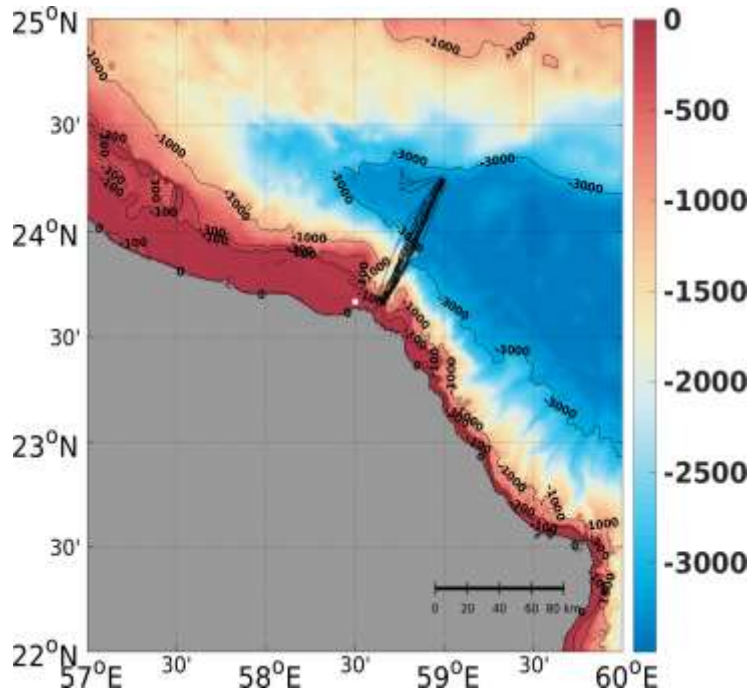


UK Current Activities, Funded Plans and Submitted Proposals for science contributing to IIOE-2

Karen J Heywood

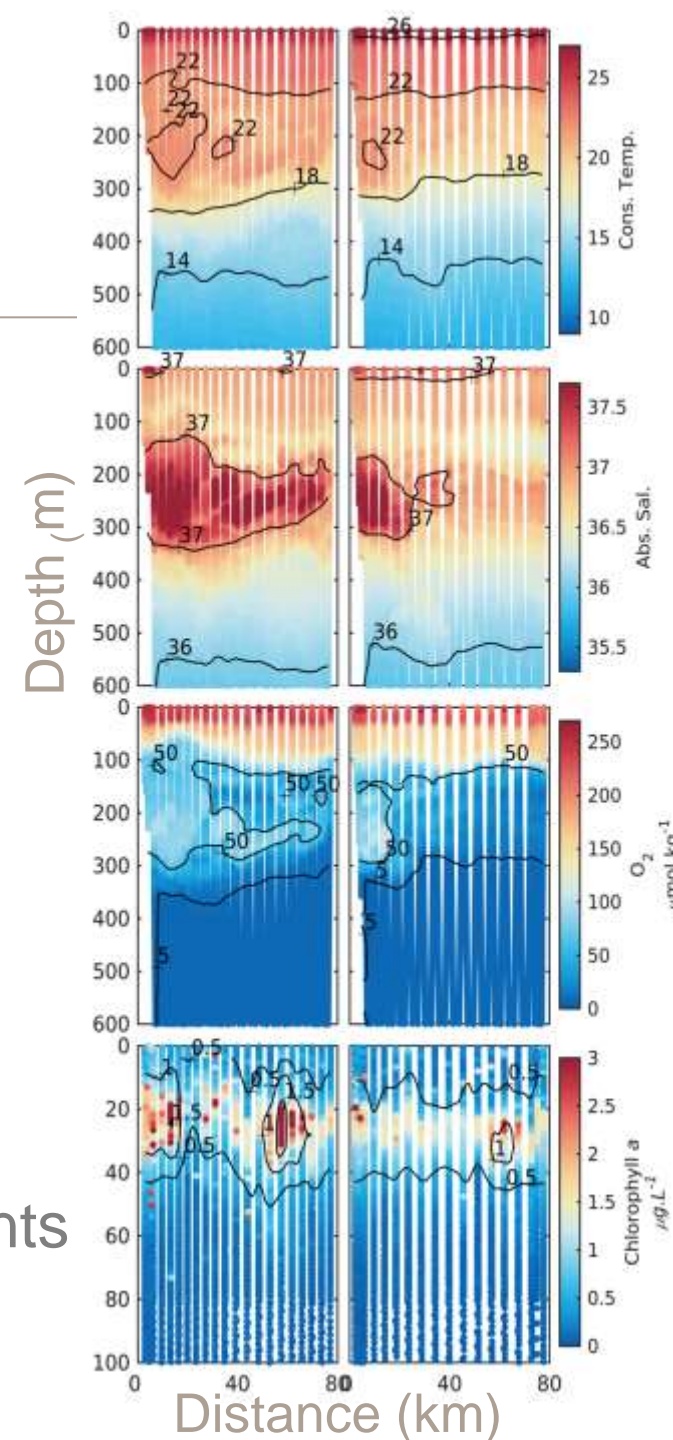
Centre for Ocean and Atmospheric Sciences (COAS)
School of Environmental Sciences
University of East Anglia, Norwich, UK

Ocean glider campaign off Oman 2015-2016



Arabian
Sea

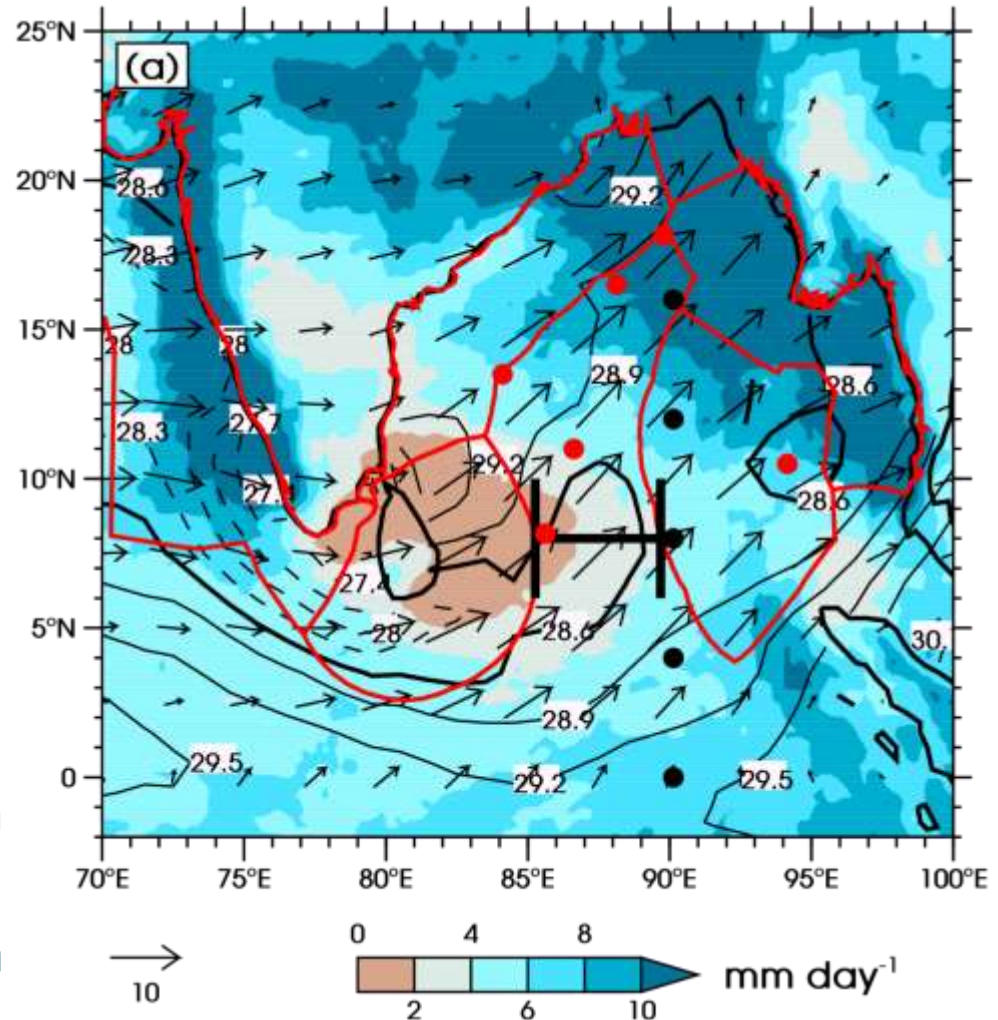
- ✦ UEA (Karen Heywood, Bastien Queste) and SQU, Oman (Sergey Piontkovski)
- ✦ Harmful algal blooms & low oxygen events
- ✦ Mechanisms for variability



BoBBLE

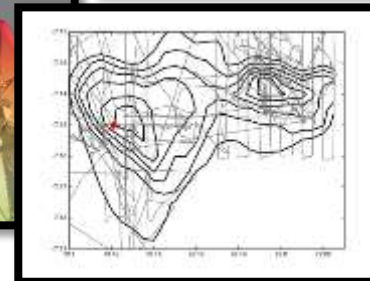
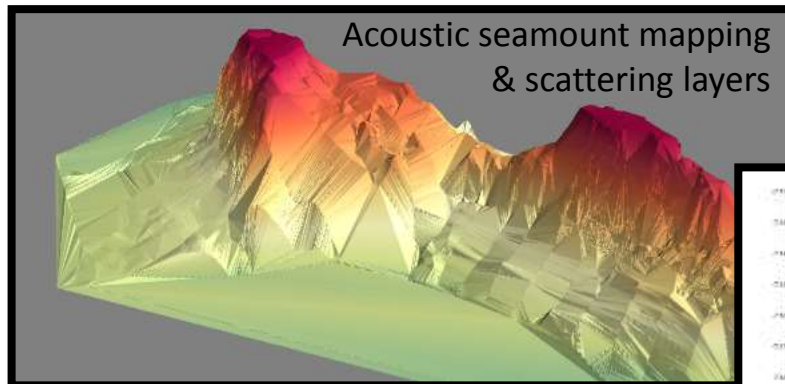
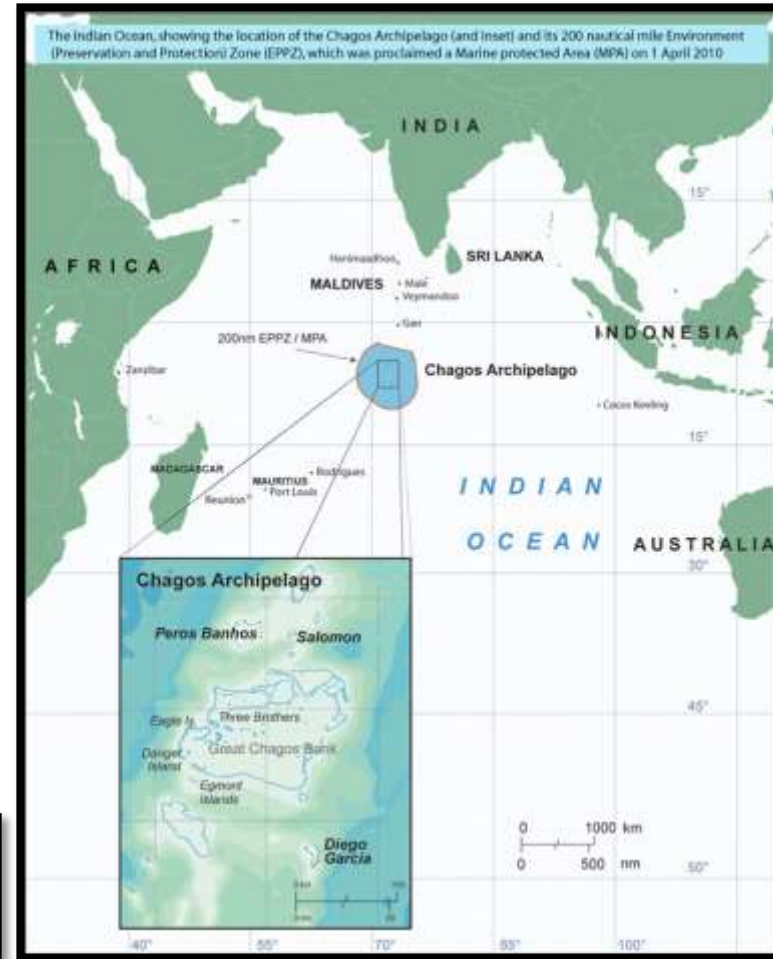
Bay of Bengal Boundary Layer Experiment

- ✦ Ocean-atmosphere interaction & monsoon rainfall
- ✦ Joint India-UK project (led by Adrian Matthews and P.N. Vinayachandran)
- ✦ June-July 2016
- ✦ 2 Indian ships
- ✦ 7 gliders
- ✦ 9 Argo floats
 - ✦ 3 SBE Navis floats with SBE CTD, radiometer
 - ✦ 4 TWR APEX floats with SBE CTD, SBE STS
 - ✦ 2 TWR APEX floats with RBR CTD



CHAGOS 2015/16 PELAGIC EXPEDITIONS – PHIL HOSEGOOD

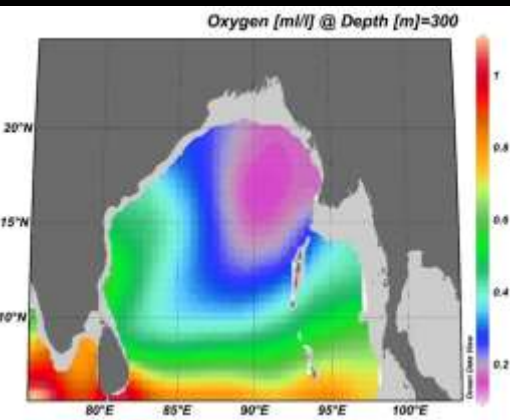
- Multidisciplinary expedition to study the physical oceanography, zooplankton, Manta foraging, and species richness/diversity throughout Chagos MPA
- Inform ecosystem management via comprehensive understanding of oceanographic regime
- First mooring & turbulence measurements in Chagos
- Repeat cruise in February 2016 and beyond



The Bay of Bengal

Biogeochemistry, oxygen dynamics and sensitivity to environmental change

Greg Cowie, Edinburgh



Proposed UK research initiative - submitted October 2015 - pending

- **Multiple UK institutions, with India, Bangladesh and other partners (led by Greg Cowie)**
- **Physical oceanographers, geochemists, ecologists, microbiologists and modellers**
- **Parallel pelagic and benthic process studies across contrasting margins – shelf to open ocean**
- **Seasonal and inter-annual comparisons**

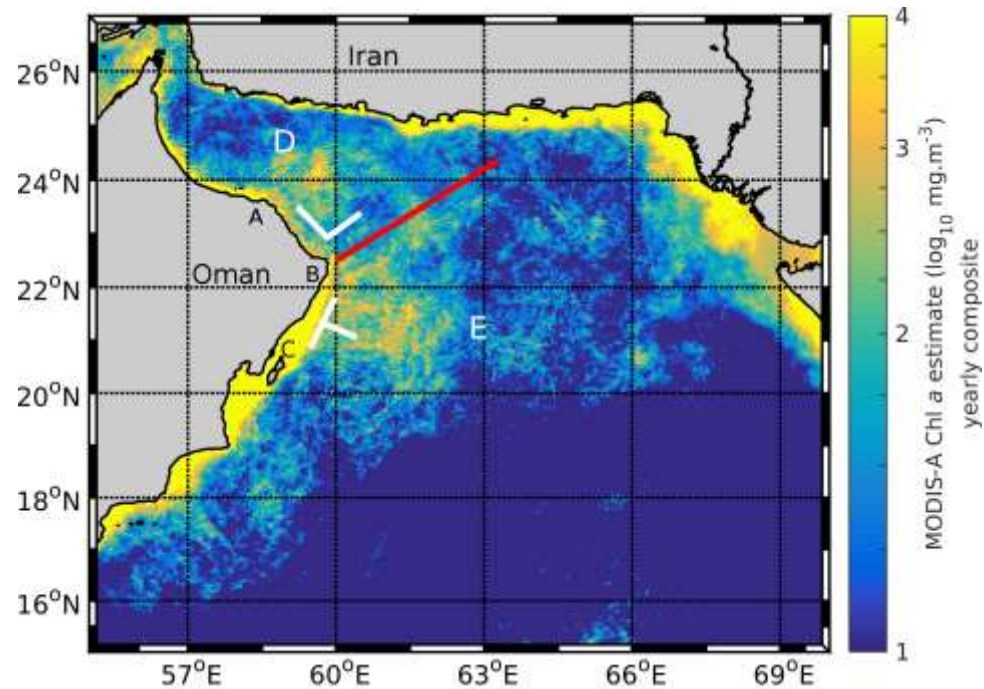
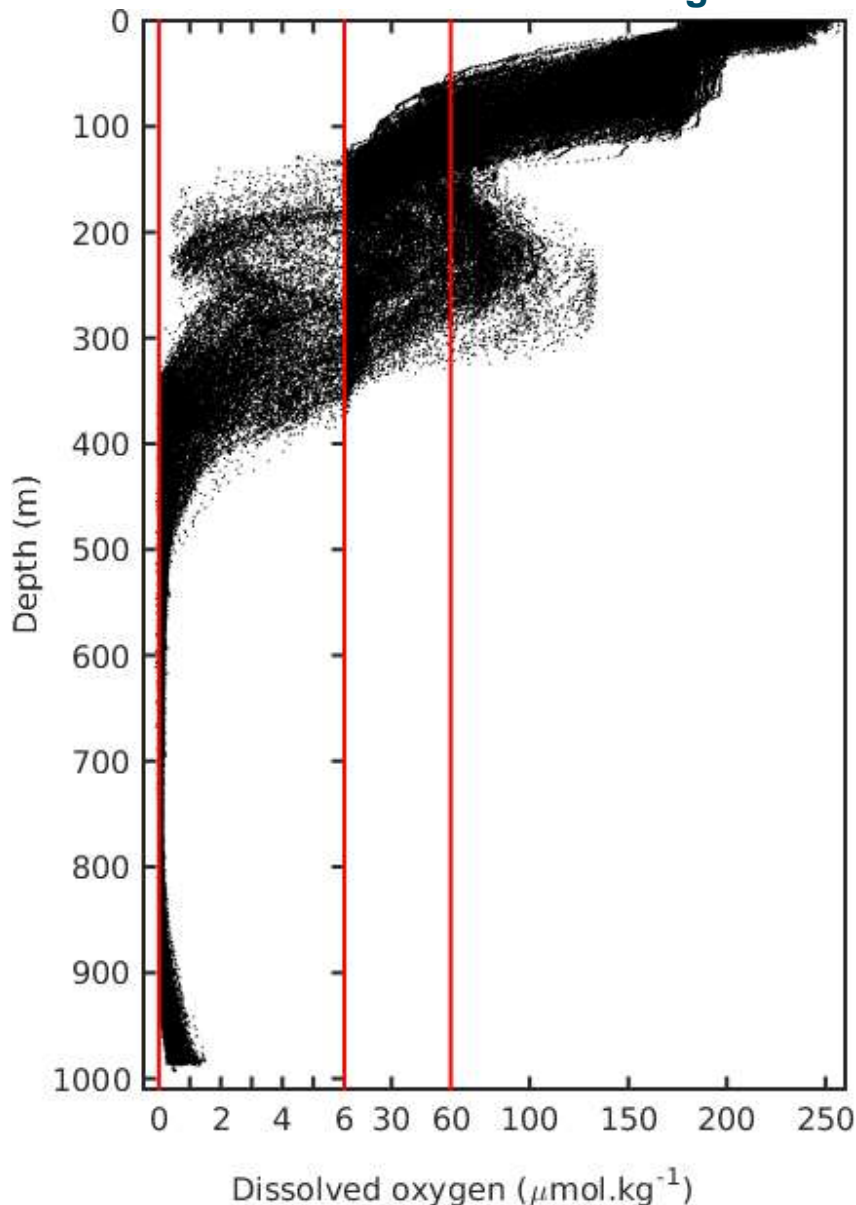
To assess :

- **water-column and benthic processes and fluxes**
- **factors controlling the current state of hypoxia**
- **how coastal and open-ocean hypoxia will evolve in response to environmental change**

GOGO:GADGET

Bastien Queste, UEA, 2016-2021

Glider Observations in the Gulf of Oman: Generation of Anoxia and Dynamics of Geobiochemical Exchanges & Transport to the Arabian Sea



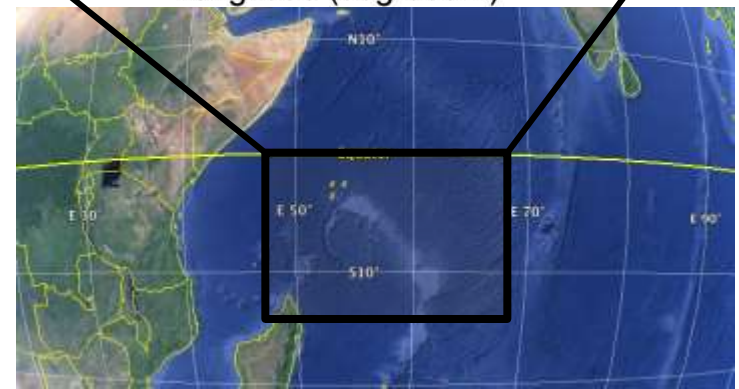
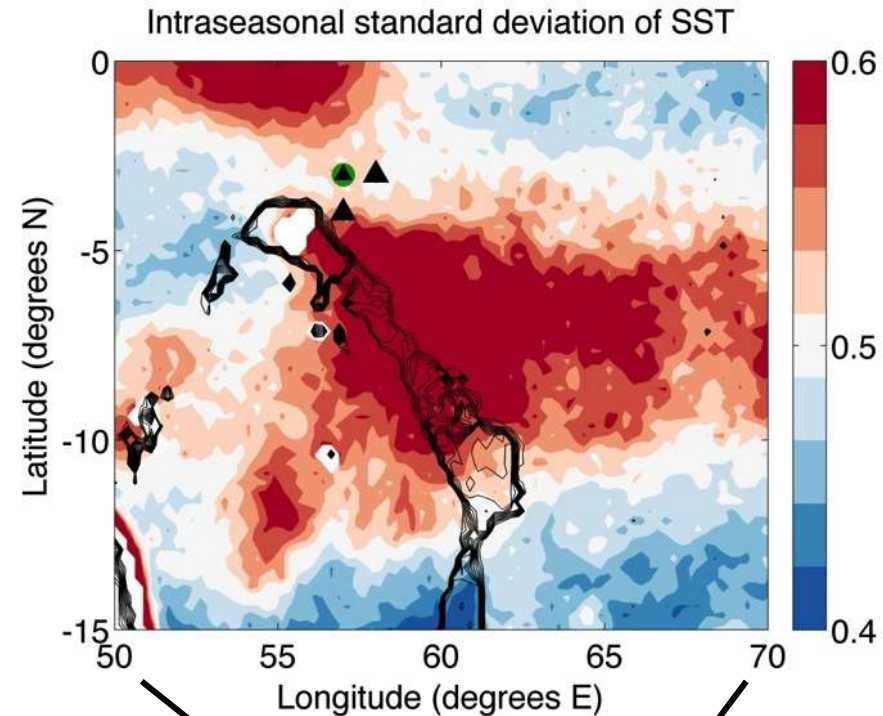
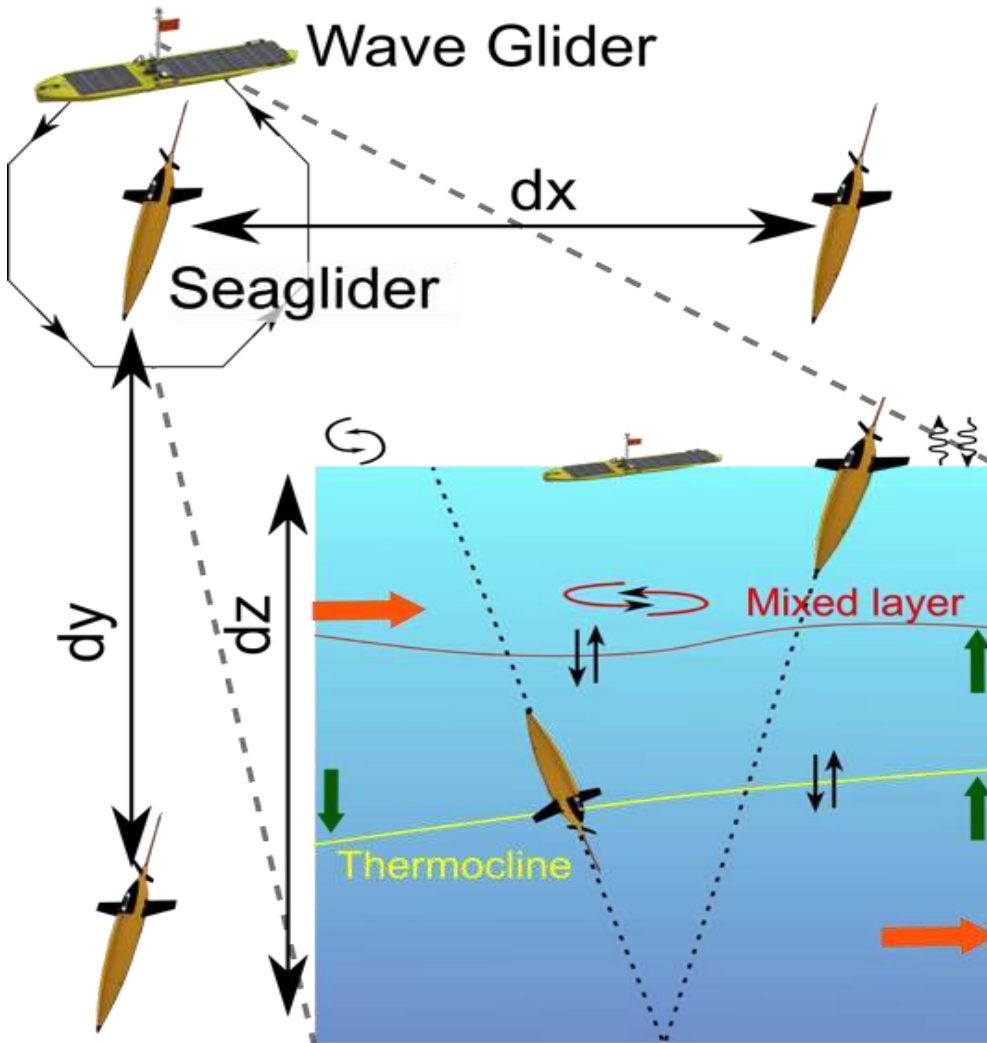
Repeat glider sections with:
Dissolved oxygen, Bisulfide (H_2S),
Nitrate/nitrite

Quantify “negative oxygen”, and
contribution of Gulf of Oman to the
budget of the Arabian Sea OMZ.

Measurements of air-sea heat fluxes in the equatorial West Indian Ocean wave guide

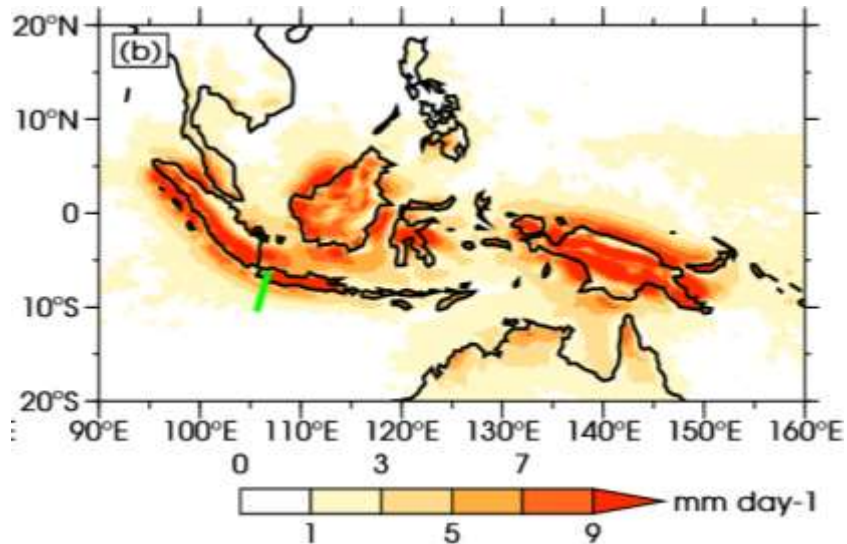
Proposal for WIOURI

Ben Webber

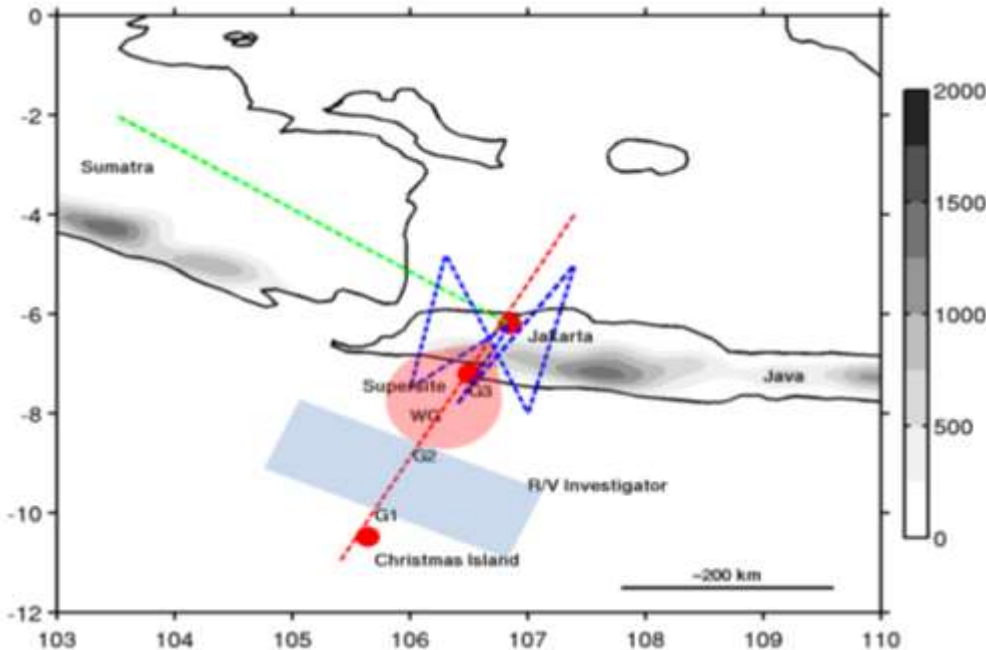


HotHouse proposal: a UK contribution to Years of the Maritime Continent (YMC) and IIOE-2

Adrian Matthews



Amplitude of diurnal harmonic of observed precipitation. Green line shows the proposed flight transect from Jakarta to Christmas Island.



Proposed flight tracks and positions of Christmas Island, Jakarta (Halim) Airport and the supersite: sortie 1 (red dashed line); sortie 2 (blue dashed line), sortie 3 (green dashed line), range of X-band Radar (red circle), approximate location of Australian research vessel (blue rectangle). Glider (Waveglider) locations are indicated by G1, G2, G3 (WG). Orography (m) is shaded.

Other areas of enthusiastic UK interest for developing collaborations:

- ✦ Arabian Sea (eddies, low oxygen, heat budget, submesoscale processes, mixing, upwelling off Oman)
- ✦ Madagascar Bloom
- ✦ MOC and deep mixing

Ask me or Peter Burkill for a copy of the report of the UK Workshop 2014 on IIOE-2

Greg Cowie is to be the UK Chair for IIOE-2