

Conference Programme – Monday 13th September 2004

Science Lecture Theatre A

09:00 Welcome and introduction

Prof George Wolff, Prof Ed Hill (Conference convenors),
Prof Drummond Bone (Vice-Chancellor, University of Liverpool)

Chair: *Prof Ed Hill*

Advances in ocean observing systems

09:20 Keynote speaker: *Prof Tommy Dickey*

Episodic and extreme events in the ocean: recent results and a view toward future studies

10:00 *David Woolf, Helen Luke, Graham Quartly*

The sound of breaking waves

10:20 *Paul Bell, Jon Williams, Steven Clark, Bradley Morris,*

Ana Vila-Concejo

Nested radar systems for remote bathymetric mapping

10:40 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Dr Ruth Parker*

Sustainable exploitation of the oceans

11:20 Keynote speaker: *John Roberts*

Managing human impacts on the marine environment – a challenge for Government and for science

12:00 *Michelle Devlin, Michael Best*

Food and phytoplankton assessment for the Water Framework Directive

12:20 *Philip Gillibrand, Sandy Murray*

A bio-physical model of larval transport in a Scottish fjord: circulation, buoyancy fluxes and transport pathways

12:40 *Kenneth Black, Lois Nickell, Martin Sayer, Heather Muir,*

Timothy Brand, Elizabeth Cook, Dror Angel, Timor Katz,

Noah Eden, Kenneth Jones

Chlorophyll and lipid profiles in sediments around a fish cage farm in the Gulf of Eilat, Israel

13:00 Lunch and Poster Session – The Courtyard, Guild of Students

Chair: *Dr Gill Malin*

Sustainable exploitation of the oceans (continued)

14:30 Buckland Lecture: *Dr Julian Addison*

Science and the management of UK crab fisheries

Zooplankton

15:10 *Geraint Tarling, Rachael Shreeve, Peter Ward, Andrew Hirst,*

Angus Atkinson

Modelling copepod life cycles in the Southern Ocean: a species-specific approach

15:30 *Sally Thorpe, Eugene Murphy, Jon Watkins*

Modelling circumpolar transport of Antarctic krill: the effect of ocean and sea-ice variability

15:50 *Daniel Mayor, Thomas Anderson, David Pond, Xabier Irigoien*

The role of lipids in supporting egg production of *Calanus finmarchicus* in the North Atlantic

Chair: *Dr Judith Wolf*

Advances in ocean observing systems (continued)

15:10 *Kyle Betteridge, Paul Bell, Peter Thorne, Jon Williams*

Measurement of orthogonal velocity profiles using a coherent Doppler system

15:30 *Roger Proctor, John Howarth, Philip Knight, Andrew Lane*

Progress of the POL Coastal Observatory

15:50 *Richard Lampitt, Uwe Send, David Billett,*

The ANIMATE Partnership

Insights from three deep ocean observatories in the eastern North Atlantic

16:10 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Dr Gill Malin*

Zooplankton (continued)

16:40 *Cairistiona Anderson, Sophie Fielding, Andrew Brierley,*

Mike Heath

Multi-frequency acoustic observations of spatio-temporal variability in the vertical distribution of zooplankton and micronekton in the Irminger Sea: implications for predation on *Calanus finmarchicus*

Phytoplankton

17:00 *Penny Holliday, Joanna Waniek, Russell Davidson, Louise Brown,*

Richard Sanders, Raymond Pollard, John Allen

Biophysical zones in the Irminger Sea: the impact of hydrographic conditions on phytoplankton growth throughout the year

17:20 *Joanna Waniek, Penny Holliday, Raymond Pollard*

The physical and meteorological preconditioning of the phytoplankton and zooplankton development in the Irminger Sea

17:40 *Claire Evans, William Wilson, Peter Liss, Louise Darroch,*

Susanne Kadner, Gill Malin

Chemical and biological warfare: DMS and related compounds during viral infection of *Emiliania huxleyi*

Chair: *Dr Judith Wolf*

Advances in ocean observing systems (continued)

16:40 *Philip Knight, John Howarth*

Vertical structure in Liverpool Bay

17:00 *Sean Gaffney, David Bowers, Gay Mitchelson-Jacob*

The onset of stratification in the western Irish Sea: bio-optical signatures

17:20 *Jason Holt, Roger Proctor, Pedro Osuna, Alejandro Souza,*

Duncan Stirling, Sarah Wakelin, Judith Wolf

The development of operational models for the POL Coastal Observatory

17:40 Winner of 2002 Prince Madog Prize

Brett Lyons, Grant Stentiford

An integrated marine monitoring workshop onboard the RV Prince Madog, 14–18th November 2003

Science Lecture Theatre A

19:15 Glass of wine before debate

19:30 Marine Science Policy Debate

Conference Programme – Tuesday 14th September 2004

Science Lecture Theatre A

Chair: *Dr Duncan Purdie*

The interface of biota and their environment

09:00 **Keynote speaker:** *Dr Gill Malin*

Biogenic production of trace gases in the marine environment

Phytoplankton (continued)

09:40 *Katherine Richardson, André Visser*

Subsurface peaks along the Dogger Bank: a production engine in the North Sea

10:00 *Patrick Holligan, Alex Poulton, Emilio Marañón*

Temporal trends in carbon fixation and community structure in the subtropical waters of the Atlantic Ocean: a decade of AMT measurements

10:20 *Alex Poulton, Sarah Root, Mark Stinchcombe, Patrick Holligan*

Carbon fixation, community structure and growth in the Atlantic Ocean: the importance of nanoplankton

10:40 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Prof Ric Williams*

Climate: ocean and atmosphere

11:20 **Keynote speaker:** *Prof Brian Hoskins*

Aspects of ocean-atmosphere interaction in storm-track regions

Chair: *Dr Harry Leach*

Overturning, circulation and climate

12:00 *Stuart Cunningham, Harry Bryden, Richard Sanders*

A new transatlantic hydrographic section across 26°N

12:20 *Alberto Naveira Garabato, Harry Bryden*

Closing the meridional overturning circulation of the Indian Ocean: the mixing perspective

12:40 *Hannah Longworth, Gerold Siedler, Molly Baringer, Harry Bryden*

Variability in the Atlantic meridional overturning circulation at 25°N from 1980 to 2004

13:00 Lunch and Poster Session – The Courtyard, Guild of Students

Chair: *Dr Harry Leach*

Overturning, circulation and climate (continued)

14:30 *Jeremy Grist, Simon Josey, Bablu Sinha*

The role of air-sea fluxes in causing rapid changes in the Atlantic Thermohaline Circulation

14:50 *Elizabeth Kyte, Graham Quartly, Mikis Tsimplis, Méric Srokosz*

Measuring a few drops in the ocean

15:10 *Glen Richardson, Martin Wadley, Karen Heywood, David Stevens, Helene Banks*

Climate response to a freshwater anomaly in the Southern Ocean

Water masses and change in heat content

15:30 *Inga Smith, David Stevens, Karen Heywood, Alberto Naveira Garabato, Michael Meredith*

Transports of the Subantarctic and Polar Fronts across the North Scotia Ridge

The interface of biota and their environment (continued)

15:50 *Jo Gascoigne, Camille Saurel, Sarah Jones, Philip Wiles*

Physical and biological mechanisms for patterning in mussel beds

Chair: *Dr Peter Ward*

Phytoplankton (continued)

14:30 *Keith Davidson, Ray Leakey, Linda Gilpin, Eric Fouillard, Elaine Mitchel, Ignacio Alvarez-Calleja, Celine Laurent*

The influence of the balance of inorganic and organic nitrogen on microbial food webs trophic dynamics

14:50 *Pedro Cermeño, Patricia Estévez-Blanco, Emilio Marañón, Emilio Fernández*

Large sized phytoplankton have higher photosynthetic efficiency than smaller cells under favourable growth conditions

15:10 *Sophie Seeyave, Mike Lucas, Trevor Probyn, Grant Pitcher*

Photoadaptation of harmful algal bloom-forming species in the southern Benguela upwelling system

15:30 *Mark Moore, Anna Hickman, Dave Suggett, Young-Nam Kim, Jonathan Sharples, Patrick Holligan*

Phytoplankton photo-acclimation versus adaptation in natural communities

15:50 *Young-Nam Kim, Mikhail Zubkov, Patrick Holligan*

Ecology of the subsurface chlorophyll maximum in the Celtic Sea

16:10 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Prof John Huthnance*

Overflows and sea ice

16:40 *Georgy Shapiro, John Huthnance, Vladimir Ivanov*

Dense water production on the continental shelves: dynamical processes and climate implications

17:00 *Caroline Bain, David Marshall, Matthew Piggott, Chris Pain, Adrian Umpleby, Gerard Gorman, Antony Goddard*

Simulating overflows using a finite-element ocean model with adaptive meshing

17:20 *Gareth Owen, Andrew Willmott*

Buoyancy-driven flows in under-ice circulation

Chair: *Dr Peter Ward*

Phytoplankton (continued)

16:40 *Duncan Purdie, Arantza Iriarte, Claire Høleton*

Predicting the intensity of Phaeocystis algal blooms in coastal Channel waters

17:00 *Andrew Folkard, Amy Sherborne*

Searching for fossil turbulence in a small, sheltered lake: implications for modelling of marine microorganism population dynamics

17:20 *Nicola Gist, Carol Robinson*

Spatial and temporal variability of the balance between marine plankton production and respiration

17:40 *Claire Widdicombe, Carole Llewellyn, Tania Smith*

Plankton diversity during a coccolithophore-rich phytoplankton bloom: the role of microzooplankton

The Courtyard, Guild of Students

19:30 **Poster session** (and buffet)

Introduced by *Prof George Wolff*

Conference Programme – Wednesday 15th September 2004

Science Lecture Theatre A

Chair: *Dr Martin Preston*

Biogeochemistry

09:00 **Keynote speaker:** *Dr Tim Lenton*

Regulation of phosphate, nitrate and oxygen in the ocean over geologic time

09:40 *El-Sayed Badr, Eric Achterberg, Alan Tappin*

Water quality assessment: where is DON?

10:00 *Eric Achterberg, Simon Ussher, Paul Worsfold*

Role of iron in marine biogeochemistry

10:20 *Mohammed Wedyan, Martin Preston*

Determination of D- and L-amino acids in aerosol samples

10:40 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Dr Martin Preston*

The interface of biota and their environment

11:20 **Keynote speaker:** *Dr Jonathan Sharples*

The shelf sea seasonal thermocline – physical variability and the biological response

Biogeochemistry (continued)

12:00 *Pinelopi Anninou*

Arsenic chemistry in Galway Bay

12:20 *Martha Gledhill, Paul McCormack, Paul Worsfold*

Detection of iron chelators (siderophores) produced by coastal bacterioplankton in nutrient enrichment experiments by high performance liquid chromatography mass spectrometry

12:40 *Pippa Curtis-Jackson, Martha Gledhill, Mark Fitzsimons*

Characterisation of marine peptides by liquid chromatographic mass spectrometry (LC-MS)

13:00 *Ian Salter, Richard Lampitt, Alan Kemp*

Biogenic particle fluxes from the eastern North Atlantic

Science Lecture Theatre B

Chair: *Prof David Prandle*

Topographic boundary propagation and processes

09:40 *Simon Holgate, Philip Woodworth*

Evidence for enhanced coastal sea level rise during the 1990s

10:00 *Chris Hughes*

Coherence and propagation along the global continental slope

10:20 *Vassil Roussenov, Ric Williams*

North Atlantic dynamical response to high latitude perturbations in buoyancy forcing

Chair: *Prof David Prandle*

Topographic boundary propagation and processes

12:00 *Nick Hardman-Mountford, Anthony Richardson,*

Jakobus Agenbag, Eberhard Hagen, Leo Nykjaer,

Frank Shillington, Carlos Villacastin

Ocean climate of the eastern South Atlantic from satellite data and wind models

12:20 *David Munday, David Marshall*

On the separation of a barotropic western boundary current from a cape

12:40 *Laura Jackson, Ric Williams, Chris Hughes*

Bottom pressure torques in gyre and channel models

13:00 *Michael Meredith, Chris Hughes*

Wind-forcing of bottom pressure variability in the southern Indian Ocean

13:20 Lunch and Poster Session – **The Courtyard, Guild of Students**

14:00 **Excursions** to Speke Hall, Blue Planet Aquarium, Hilbre Island or **Five-a-side football**, depart from Guild of Students

19:00 **Pub crawl**, meet at Dr Duncan's on St John's Lane/Queen Square

21:00 **Cavern Club**, Mathew Street

Conference Programme – Thursday 16th September 2004

Science Lecture Theatre A

Chair: *Prof George Wolff*

Advances in ocean observing systems

09:00 **Keynote speaker:** *Prof Graham Shimmield*

The role of benthic observatories in an integrated Ocean Observing System

Deep sea/benthic

09:40 *Ian Hudson, Ben Wigham, David Billett, Paul Tyler, George Wolff, David Pond*

Long-term change in the north-east Abyssal Atlantic: seasonality, selectivity and reproductively important food sources

10:00 *David Billett, Brian Bett, Ben Wigham*

Jelly lakes in the abyssal Arabian Sea – massive food falls

10:20 *Clare Woulds, Greg Cowie, The RRS Charles Darwin Team*

Tracer studies of macrofauna as controls on organic matter cycling across the Arabian Sea oxygen minimum zone

10:40 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Prof George Wolff*

Deep sea/benthic (continued)

11:20 *Kirsten Richardson, Mike Kendall, Nick Hardman-Mountford, John Spicer, Tony Hawkins*

A spatially resolved, geophysical classification of benthic habitats related to regional scale patterns of Echinoderm biodiversity

Carbon fluxes and trace elements

11:40 *Zoë Bond, Anne Cohen, William Jenkins*

Potential ocean palaeoclimate records from gorgonian coral skeletons

12:00 *Claire Hughes, Gill Malin, Carol Turley, Brendan Keely, Philip Nightingale, Peter Liss*

Iodocarbon production in the sea

12:20 *Laura Goldson, Stephen Archer, Philip Nightingale*

Cycling of iodocarbons determined during an in situ addition experiment

12:40 *Jon Olafsson, Taro Takahashi, Solveig Olafsdottir, Magnus Danielsen*

Carbon dioxide and nutrients in Atlantic, Arctic and Polar Waters of the North Atlantic

Science Lecture Theatre B

Chair: *Prof Alan Elliott*

Coastal processes

10:00 *Roger Proctor, Jason Holt, John Howarth, David Hydes, David Mills*

Ecosystem function of Liverpool Bay

10:20 *Matthew Palmer, Tom Rippeth, John Simpson*

The internal tide and associated mixing in the Celtic Sea

Chair: *Prof Alan Elliott*

Coastal processes (continued)

11:20 *Mark Inall, Tom Rippeth, Colin Griffiths, Philip Wiles, Neil Fisher*

Temporal evolution and spatial distribution of TKE production and dissipation within a stratified tidal jet

11:40 *João Lencart e Silva, John Simpson, António Hogueane*

Buoyancy-stirring interactions and circulation in a tropical ROFI

12:00 *Adam Leadbetter, Chris Vincent*

Modelling sediment transport in mixed marine environments

12:20 *Peter Thorne, Alan G. Davies, Paul Bell*

An analysis of vortex sediment entrainment and classical turbulent diffusion over sand ripples beneath waves

12:40 *Philip Wiles, John Simpson, Luca van Duren, Clivia Haese, Jens Larsen*

The role of turbulence in benthic filter feeding

13:00 Lunch and Poster Session – The Courtyard, Guild of Students

Chair: *Richard Burt*

Remote sensing

14:30 *David Blondeau-Patissier, Gerald Moore, Suzanne Kratzer, James Fishwick, Victor Martinez-Vincente*

Validation of a bright pixel atmospheric correction bio-optical model with in situ measurements and SeaWiFS, MODIS, MERIS derived products from northern European Case 1 and Case 2 waters

14:50 *Gerald Moore, David Blondeau-Patissier, Takafumi Hirata, Tim Smythe*

Determination of inherent optical properties from the MERIS, MODIS and SeaWiFS sensors in both Case 1 and Case 2 waters: applications to water quality and models

15:10 *James Fishwick, Ray Barlow, Jim Aiken, Gerald Moore*
Validation of MERIS ocean colour products and their relationship with photosynthetic quantum efficiency, pigment and absorption in the Benguela ecosystem in 2002

15:30 *Caren Binding, David Bowers, Katherine Ellis, Gay Mitchelson-Jacob*

Measuring suspended sediment particle size from space

Chair: *Dr Mark Inall*

Coastal processes (continued)

14:30 *Katherine Ellis, Caren Binding, David Bowers, Sarah Jones, John Simpson*

A simple numerical model of turbidity maximum maintenance in the Irish Sea

Water masses and change in heat content (continued)

14:50 *Jenny Ullgren, Martin White, Christian Mohn*

Water mass structure and mixing in the southern Rockall Trough in winter 2003–2004

15:10 *Susan Leadbetter, Ric Williams, Susan Lozier*

Variations in surface heat flux and implications for mode water formation in the North Atlantic Ocean

15:30 *Sheila Stark, Helene Banks, Richard Wood*

Mechanisms of mode water variability in HadCM3

15:50 Coffee/tea break and Exhibitors: Science Block Foyer

16:30 **Challenger Society Annual General Meeting**

St George's Hall, Liverpool

19:10 Arrive for Civic Reception (smart dress)

19:15 **Civic Reception** given by the

Lord Mayor of Liverpool, Councillor Frank Roderick

20:00 **Challenger Conference for Marine Science** Conference Dinner

Conference Programme – Friday 17th September 2004

Science Lecture Theatre A

Chair: *Prof Ric Williams*

Overturning, circulation and climate (continued)

09:00 **Keynote speaker:** *Prof David Marshall*

Abrupt change of the Atlantic Meridional Overturning
Circulation: theory and monitoring

09:40 **Challenger Medallist:** *Dr John Scott*

Measurement and monitoring challenges facing Operational
Oceanography

10:10 **Challenger Medallist:** *Dr Tony Heathershaw*

Oceanic noise pollution: poacher turned gamekeeper

10:40 Coffee/tea break and Exhibitors: Science Block Foyer

Chair: *Prof Ric Williams*

Overturning, circulation and climate (continued)

11:20 *Grant Bigg*

Chaos in the North Atlantic overturning?

Carbon fluxes and trace elements (continued)

11:40 *Spencer Liddicoat, Ian Totterdell, Richard Wood*

Modelling the variability of air-sea CO₂ exchange on interannual
to decadal timescales

12:00 *Richard Sanders, Elaine McDonagh, Harry Bryden*

Increases in dissolved oxygen concentration in the interior of the
Indian Ocean and their implications for the marine and terrestrial
carbon sinks in the 2000s

UK Ocean Research Services

12:20 *Geraint West*

National Marine Equipment Pool procurement planning – how to
influence it

Science Lecture Theatre B

Chair: *Dr Mark Inall*

Coastal processes (continued)

11:20 *Pedro Osuna, Judith Wolf*

Wave-current interaction in the Irish Sea

11:40 *Tom Rippeth, Neil Fisher, John Simpson, Eirwen Williams*

Tidal straining in Liverpool Bay

12:00 *Sarah Jones, Colin Jago, Matthew Palmer*

Controls on size of suspended particles in stratified shelf waters

13:00 Lunch and Poster Session – The Courtyard, Guild of Students

CLOSE OF CONFERENCE