

Primary production in the ocean: from the synoptic to the global scale

The 45th International Liège Colloquium

Liège, Belgium
13th – 17th May 2013



45th Liège Colloquium on Ocean Dynamics

"Primary production in the ocean: from the synoptic to the global scale"

13 to 17 May 2013

Meeting Place: Salle Académique - Place du XX août - Liège City Center

Program

	Monday (13/05)	Tuesday (14/05)	Wednesday (15/05)	Thursday (16/05)	Friday (17/05)
08:30	Registration				
09:00		09:00	09:00	09:00	09:00
09:30	Opening of the colloquium	Sea Ice session Convener: D. Thomas	Benthic-Pelagic Convener: M. Vichi & P. Regnier	Mesoscale Convener: M. Lévy	Field estimates Convener: J. Marra
09:45	Keynote by John Marra	Keynote: C. Mundy	Keynote: S. Arndt	Keynote: A. Mahadevan	Keynote: E. Maranon
10:15	Arctic session Convener: M. Babin	Coffee	Coffee	Coffee	Coffee
10:50	Keynote: E. Carmack	PFT Session Convener: S. Sathyendranath			
11:10		Keynote : M. Follows			
11:30					
11:50					
12:10					
12:30					
14:00	Antarctic session Convener: P. Monteiro		Upwelling session Convener: J. Aristegui	Modelling session Convener: M. Grégoire	
14:30	Keynote: M. Bender		Keynote: F. Chavez		
14:50					
15:10					
15:30		Coffee	Coffee	Coffee	Coffee
15:50	Coffee				Satellite/bloom session Convener: G. Tilstone
16:10					
16:30					
16:50				Social event Guided Visit of the Liege centre	
17:10					
17:30					
18:00	Ice Breaker party	Poster session Cheese and wine reception			
			Colloquium dinner at the Crown Plaza Hotel		

Monday

08:30 - 9:30	Registration	
09:30 - 9:45	Welcome by Marilaure Grégoire & Alberto Borges	
9:45 - 10:15	Introductory Keynote by John Marra	Some Perspectives on Oceanic Primary Production
Session 1 – Primary Production in the Arctic Ocean		Convener: M. Babin
10:15 - 10:45	Keynote: E. Carmack	Processes Affecting Primary Productivity in the Arctic Ocean: an Overview and Perspective
10:45 - 11:05	Henson S., H. Cole, C. Beaulieu, A. Yool	The impact of global warming on seasonality of ocean primary production
11:05 - 11:25	Vancoppenolle M., Bopp L., Madec G., Dunne J., Ilyina T., Halloran P., Steiner N.	Future Arctic Primary Productivity from CMIP5 Simulations: Uncertain Outcome, but Consistent Mechanisms
11:25 - 11:45	Spitz Y. H., Ashjian C. J., Campbell R. G., Steele M., Zhang J.	Western Arctic Ocean Primary Productivity Changes over the Last Three Decades and in the Future: not a Simple Story
11:45 - 12:05	Stanley R. H. R., Sandwith Z. O., Williams W. J.	Rates of Summertime Biological Productivity in the Beaufort Gyre: A Comparison between the Record-Low Ice Conditions of August 2012 and Typical Conditions of August 2011
12:05 - 12:25	Juul-Pedersen T, K Engel Arendt, J Mortensen, M Blicher, S Rysgaard	A 6-year study of pelagic primary production in a freshwater influenced sub-Arctic fjord system – with a view to the past
12:25 - 14:00	Break	
Session 2 – Primary Production in the Antarctic Ocean		Convener: P. Monteiro
14:00 - 14:30	Keynote: M. Bender	On the small range of net community production rates in the open ocean
14:30 - 14:50	Blain S.	What is the upper limit for primary production in the Southern Ocean?
14:50 - 15:10	Castro-Morales K., Cassar N., Kaiser J.	Biological production and the influence of vertical physical processes in the Bellingshausen Sea, Southern Ocean
15:10 - 15:30	Cavagna A.-J., Dehairs F., Jacquet S., Planchon F.	Primary production and potential for carbon export in naturally iron-fertilized waters in the Southern Ocean
15:30 - 15:50	Joubert W, Thomalla S, Swart S and Monteiro PMS	The Sensitivity of the Seasonal Cycle of Phytoplankton Productivity to sub-Seasonal Mixed Layer Dynamics in the Sub-Antarctic Region
15:50 - 16:10	Tagliabue A, J-B Sallée, A Bowie, P Boyd, M Lévy, S Swart	Towards Reconciling Iron Supply and Demand in the Southern Ocean
16:10 - 16:30	Coffee	
16:30 - 16:50	Sallée J-B, Llort J., Tagliabue A., Lesommer J., Lévy M.	Towards understanding the spatial variability of bloom onset in the Southern Ocean
16:50 - 17:10	Shadwick E. H., Cassar N., Tilbrook B., Trull T.	Influence of net community production and physical processes on surface oxygen and carbon distribution along a north-south section across the Australian Sector of the Southern Ocean
17:10 - 17:30	Swart S., Thomalla S. J., Monteiro P. M. S.	Resolving the seasonal cycle of mixed layer physics and phytoplankton biomass in the Sub-Antarctic Zone using high resolution glider data
17:30 - 17:50	Trull T., Weeding B., Davies D., Bray S., Jansen P.	Productivity estimates from hourly automated measurements at the Australian Southern Ocean Time Series site
17:50 - 20:30	Ice Breaker party	

Tuesday

Session 3 – Primary Production in sea-Ice		Convener: D. Thomas
09:00 - 9:30	Keynote: C.J. Mundy	Arctic spring: key processes influencing timing of primary producers in ice-covered
09:30 - 09:50	Meiners K. M., M. Vancoppenolle, S. Thanassekos, Dieckmann G. S., D. N. Thomas, J.-L. Tison, K. R. Arrigo, D. L. Garrison, A. McMinn, D. Lannuzel, P. Van Der Merwe, K. M. Swadling, W. O. Smith JR., I. Melnikov, B. Raymond	Chlorophyll a in Antarctic sea ice from historical ice core data
09:50 - 10:10	Tedsco L., M. Vichi, H. Kaartokallio	Sea ice biogeochemistry: a guide for marine ecosystem modellers
10:10 - 10:30	Fernández-Méndez M., I. Peeken, A. Boetius	New estimates of primary productivity and its limiting factors in the Central Arctic
10:30 - 10:50	Coffee	
Session 4 – Phytoplankton Functional Types		Convener: S. Sathyendranath
10:50 - 11:20	Keynote: M. Follows	Traits and trade-offs that shape diverse phytoplankton populations
11:20 - 11:40	Anabalón V., J. Arístegui, C.E. Morales, I. Andrade, M. Benavides, M. Correa-ramírez, M. Espino, O. Ettahiri, S. Hormazabal, A. Makaolu, M.F. Montero, A. Orbl	The structure of planktonic communities under variable coastal upwelling conditions off Cape Ghir (31°N), in the Canary Current System (NW Africa)
11:40 - 12:00	Bouman H. A., S. Sathyendranath, T. Platt	Environmental Controls on Phytoplankton Photophysiology and Community Structure in Temperate Coastal and Shelf Waters
12:00 - 12:20	Bretherton L. M. J., T. Lawson, C. M. Moore, A. Poulton, R. J. Geider, D. J. Suggett	Light availability affects the ocean acidification response in coccolithophores
12:20 - 14:00	Break	
14:00 - 14:20	Bruggeman J., K.W. Wirtz	Phytoplankton plasticity controls long-term variability: lessons from a lake
14:20 - 14:40	Dufosse F., V. Gentilhomme, F. Goulard, E. Breton, N. Degros, S. Lefebvre	Impact of nutrient limitation on the productivity of three functional groups of marine phytoplankton: experimental approach
14:40 - 15:00	Huete-Ortega M., P. Cermeño, A. Fernández, B. Fernández-Castro, N. González, D. López-Sandoval, B. Mouriño-Carballid, C. Sobrino, E. Marañón	Environmental control on phytoplankton size-fractionated primary production in the tropical and subtropical Atlantic, Indian and Pacific oceans
15:00 - 15:20	Lew S., A. Martin, T. Anderson, M. Zubkov	Multiple use of light energy by open ocean keystone cyanobacteria: A modelling study
15:20 - 15:40	Nicholson D., S. Doney, R. Stanley, I. Lima	Dissolved gas tracers of gross primary production and net community production: perspectives from a global ecosystem and biogeochemistry model.
15:40 - 16:00	Coffee	
16:00 - 16:20	Palacz A.P., M.A. St. John, R.J.W. Brewin, T. Hirata	Distribution of phytoplankton functional types in high-nitrate low-chlorophyll waters in a new diagnostic ecological indicator model
16:20 - 16:40	Sathyendranath S., V. Stuart, H. Bouman, T. Platt	Field measurements of bio-optical properties of phytoplankton types for use in primary production models
16:40 - 17:00	Hickman AE, S Dutkiewicz, O Jahn, WW Gregg, MJ Follows	The role of light for phytoplankton distributions and productivity
17:00 - 17:20	Borchard, C., Wurst, M. and Engel, A.	Particulate and size-fractionated dissolved primary production derived from <i>Emiliana huxleyi</i>
17:20 - 17:40	Terseleer N., J. Bruggeman, C. Lancelot, N. Gypens	Trait-based representation of diatom diversity in a Plankton Functional Type model
17:40 - 20:30	Poster session - Cheese and wine reception	

Wednesday

Session 5 – Benthic- pelagic coupling		Convener: M. Vichi & P. Regnier
09:00 - 09:30	Keynote: S. Arndt	An integrative view of the biological carbon pump: from the surface ocean to the deep sediment
09:30 - 09:50	Borges AV, Champenois W	Seasonal and inter-annual variations of gross primary production, community respiration, and
09:50 - 10:10	Closset I., D. Cardinal, F. Thil, S. Bray, T. Trull	Seasonal variation, origin and fate of settling diatoms in the Southern Ocean tracked by silicon isotope record in deep sediment traps
10:10 - 10:30	Martini E, Desmit X, Lacroix G, Kerckhof F, Degraer S	Assessing bivalve's distribution as a response to phytoplankton/inorganic suspended particles ratio in the Belgian Coastal zone: a trait based model.
10:30 - 10:50	Coffee	
10:50 - 11:10	J. Harlay, L. Chou, K. Sabbe, N. Van Oostende, A. Engel, J. Piontek and A. Borges	Coccolithophore blooms in the Bay of Biscay: Results from the PEACE project
11:10 - 11:30	Stegert C., L. Memery, T. Gorgues, J. Deshayes	Up or down - Modeling the fates and rates of phytoplankton carbon in the North Atlantic Ocean
11:30 - 11:50	Capet A., M. G�goire, J.-M. Beckers, F. Meysman, K. Soetart	Introducing dynamic benthic fluxes in 3D biogeochemical model : an application on the Black Sea North-Western shelf
11:50 - 12:10	Pena A., D. Masson	The role of physical factors in determining the variability and fate of primary production in the Strait of Georgia: A biophysical model study
12:10 - 14:00	Break	
Session 6 – Primary production variability and coastal-offshore		Convener: J. Aristegui
14:00 - 14:30	Keynote: F. Chavez	Climate driven variations in the source and fate of primary production in coastal upwelling systems
14:30 - 14:50	Aristegui J., X.A. �lvarez-Salgado, F. Alonso-P�rez, V. Anabal�n, F. Baltar, M. Benavides, M. Espino, F.G. Figueiras, M. Froj�n, R. Gra�a, M.F. Montero, X.A. Pad� N, F.F. P�rez, T. Reinthaler, A.F. R�os, G. Ros� N, P. Sangr�, I.G. Texeira, C. Troupin, E.D. Barton	Variability in primary production, carbon stocks and fluxes, plankton community structure and metabolic balance, along the Cape Guir filament (NW Africa): A lagrangian approach
14:50 - 15:10	Castro C.G., B. Arbones, X.A. Alvarez-Salgado, F. Alonso-P�rez, M. Froj�an, D. Z�figa, I.G. Teixeira, F.G. Figueiras	Net ecosystem metabolism in the NW Iberian Upwelling System on an annual cycle
15:10 - 15:30	Figueiras F.G., O. Espinoza-Gonz�lez, B. Arbones, I.G. Teixeira, C.G. Castro	Estimating phytoplankton size-fractionated primary production in the NW Iberian margin: is mixotrophy relevant in pigmented nanoplankton?
15:30 - 15:50	Coffee	
15:50 - 16:10	Garc�a-Garc�a L. M., M. Ruiz-Villarreal, P. Otero	Modeling the spring bloom in North and North West Iberia by means of a N2PZD2 model
16:10 - 16:30	Greenwood J., R. Matear, C. Sun, J. McLaughlin	Impact of submesoscale upwelling on phytoplankton production along an oligotrophic boundary current
16:30 - 16:50	Hosegood, P. J., Torres, R. J.	Nutrient pumping by submesoscale instabilities in the Mauritanian upwelling system
16:50 - 17:10	Messi� M., F. P. Chavez	Regulation of seasonal primary production in eastern boundary upwelling systems
17:10 - 17:30	Morales C.E., S. Hormazabal, I. Andrade, M. Correa-Ramirez	High resolution time-space variability of satellite chlorophyll-a in the coastal and coastal transition zones off central-southern Chile (33-42�S)
20:00 - 23:00	Colloquium Dinner: "Crowne Plaza Hotel"	

Thursday

Session 7 - Impact of meso/submesoscale on Primary Production

Convener: M. Lévy

09:00 - 09:30	Keynote: A. Mahadevan	Impact of meso- and submeso-scale dynamics on primary production
09:30 - 09:50	Ayata S.-D., O. Bernard, O. Aumont, A. Tagliabue, A. Sciandra, M. Lévy	Effects of photo-acclimation and variable stoichiometry of phytoplankton on production estimates from 1D and 3D marine ecosystem modelling
09:50 - 10:10	D'Ovidio F	The structuring role of horizontal stirring on primary production
10:10 - 10:30	Gaube P., D. Chelton, D. McGillicuddy	Regional Variability of the Observed Influence of Mesoscale Ocean Eddies on Near-Surface Chlorophyll
10:30 - 10:50	Coffee	
10:50 - 11:10	Hardman-Mountford N, C Robinson, R Torres, T Smyth, I Brown, V Kitidis, P Serret, P Nightingale	Quantifying competing carbon pathways in mesoscale upwelling filaments off NW Africa
11:10 - 11:30	Jonsson B, J Salisbury, A Mahadevan	Episodicity in Phytoplankton Dynamics on Regional and Global Scales
11:30 - 11:50	Martin A.P., R.E.M. Pidcock, J.T. Allen, S.C. Painter, M.A. Srokosz	Quantifying the mesoscale influence on primary production in the field
11:50 - 12:10	Matear R	Climate change projection of phytoplankton concentrations and primary production using an eddy-resolving ocean model
12:10 - 12:30	McKiver W. J., M. Vichi, T. Lovato, A. Storto, S. Masina	Enhancement of primary production at greater resolved scales: results from the GreenSeas project
12:30 - 13:30	Break	

Session 8 - Modelling

Convener: M. Grégoire

13:30 - 13:50	Arteaga L., M. Pahlow, A. Oschlies	Estimating global-ocean primary production, and nutrient-light colimitation by combining remote-sensing data with an optimality-based phytoplankton model
13:50 - 14:10	Daewel U, C Schrum, D Pushpadas	Processes relevant for multi-decadal changes in primary production in the North Sea and Baltic Sea: hindcast and scenario modelling
14:10 - 14:30	Grosse F, J O. Backhaus, J Pätsch, B Walter	Parameterising primary production and convection in a 3D model
14:30 - 14:50	Lévy M. and Martin A. P.	On the magnitude of Primary Production Reynolds effects in the open ocean
14:50 - 15:10	Cossarini G. Lazzari P. and Solidoro C.	Primary production and the carbonate system in the Mediterranean Sea
15:10 - 15:30	Coffee	
15:30 - 15:50	Muacho S., J.C.B. Da Silva, V. Brotas, P.B. Oliveira	Internal tidal waves effects on near-surface chlorophyll concentration and primary production around Nazaré Canyon (western Portugal) and in the central region of the Bay of Biscay
15:50 - 16:10	Prowe AEF, Andersen KH, T Kiorboe, AW Visser	Zooplankton feeding traits and community composition in a global ecosystem model
16:10 - 16:30	Völker C., Holtz L., Hauck J., Wang T., Wolf-Gladrow D.	Ground-truthing variable-stoichiometry models

17:00 - 19:00 Social Event: Guided Visit of the Liège Center

Friday

Session 9 – Field estimates of Primary Production		Convener: J. Marra
09:00 - 09:30	Keynote: E. Marañón	Patterns in phytoplankton size structure: abundance, biomass and production in coastal and open-ocean waters
09:30 - 09:50	Ferrari R. , G. Flierl, A. Mignot	Biological and physical triggers of the North Atlantic Spring Bloom
09:50 - 10:10	Jacox M. G., C.A. Edwards, M. Kahru, D. L. Rudnick and R. M. Kudela	Potential for Improving Primary Productivity Estimates through Subsurface Chlorophyll and Irradiance Measurement
10:10 - 10:30	Kromkamp J C., G Silsbe, J Waanders, J Peene	Automated FRRF measurements provide an alternative means to obtain seasonal and annual primary production estimates in the Eastern and Western Scheldt Estuaries.
10:30 - 10:50 Coffee		
10:50 - 11:10	Li Z, N Cassar	Estimation of Large-scale Net Community Production Patterns based on in-situ O ₂ /Ar Measurements and Remotely Sensed Properties
11:10 - 11:30	Mantikci M., S. Markager, J.L.S. Hansen	The ratio of dark respiration to maximum photosynthesis and seasonal variability in two marine coastal waters
11:30 - 11:50	Napoléon C., P. Claquin	Estimation of primary production at high frequency using multi-parametric relationships between PAM measurements and carbon incorporation.
11:50 - 12:10	Peters F., E. Romero, R. Gallisai, O. Guadyol	The seasonal variability of chlorophyll with special emphasis in the Mediterranean
12:10 - 12:30	Tilstone G, T Smyth, A Rees	Spatial and temporal variability in satellite estimates of primary production over the Atlantic basin
12:30 - 14:00 Break		
14:00 - 14:20	Briggs N., M.J. Perry, E. Dásaro, K Gudmundsson, I. Cetiníc, E. Rehm, C. Lee	Using diel cycles in O ₂ and particulate organic carbon to estimate primary productivity from a Lagrangian mixed-layer float during the North Atlantic bloom
14:20 - 14:40	Ayers J. M. , P. G. Strutton	Low latitude export production and its high latitude nutrient sources: interannual variability
Session 10 - Satellite		Convener: G. Tilstone
14:40 - 15:00	Zhongping Lee	Sensing primary production from ocean color: Puzzle pieces and their status
15:00 - 15:20	Thomas H, S E Craig, B J. W. Greenan, W J. Burt, G J. Herndl, S Higginson, L Salt, E H. Shadwick, J Urrego-Blanco	Understanding controls of diel patterns of biological CO ₂ fixation in the North Atlantic Ocean
15:20 - 15:40	Craig S E., H Thomas, C T. Jones, B J. W. Greenan, W K. W. Li, J Sheng, E Shadwick, W Burt	The effect of seasonality in phytoplankton community composition on carbon uptake on the Scotian Shelf, northwest Atlantic
15:40 - 16:00 Coffee		
16:00 - 16:20	Cole H. S., S. A. Henson, A. P. Martin, A. Yool	Physical drivers of interannual variability in phytoplankton phenology
16:20 - 16:40	Kahru M, M G. Jacox, R M. Kudela, Z Lee, B. G Mitchell	Optimized multi-satellite merger to create time series of primary production estimates in the California Current
16:40 - 17:00	Lavigne H., F. Dórtenzio, M. Ribera Dálcalà, H. Claustre	Mixed layer depth variability and phytoplankton phenology in the Mediterranean Sea
17:00 - 17:20	Soccodato A, F Dóvidio, S De Monte	Biodiversity hotspots of primary producers at the global scale
17:20 - 17:40	Organelli E., A. Bricaud, D. Antoine, J. Uitz	Retrieval of phytoplankton size classes from light absorption spectra using a multivariate approach

Session 11 – Posters

Primary Production in the Arctic Ocean

1	Cherkasheva A., A. Bracher, E.-M. Noetig, E. Bauerfeind	Towards more accurate Greenland Sea primary production estimates: a parametrization of the chlorophyll vertical profile
2	Campbell K, C.J. Mundy, M Gosselin, D Barber	Characterizing the ice algae biomass-snow depth relationship over spring melt using transmitted irradiance
3	Coupel P., D.Ruiz-Pino, M.A. Sicre, J.C. Gascard	The role of freshening in controlling phytoplankton production in the Pacific sector of the Arctic Ocean
5	Kivva K. , A. Vazhova, D. Chulchekov	Net community production in the Western Bering Sea in 2010 and 2012
5	Ardyna M., Babin M., Gosselin M., Devred E., Bélanger S., Matsuoka A., Tremblay J-E	Parameterization of vertical chlorophyll a in the Arctic Ocean: Impact of the subsurface chlorophyll maximum on regional, seasonal and annual primary production estimates
6	Jackson T., H. Bouman, S. Sathyendranath, G. Tilstone, E. Tynan, A. Pavlov, R. Leakey	Modeling of Primary Production in the Greenland Sea region
7	Xi H., P. Larouche, C. Michel	Spatio-temporal variability of inherent optical properties in Hudson Bay, Canada

Primary Production in the Antarctic Ocean

8	Dufour C.O., L. Merlivat, J. Le Sommer, J. Boutin, D. Antoine	Interannual variability of primary production and air-sea CO ₂ flux in the Atlantic and Indian sectors of the Southern Ocean
9	Hauck J, C. Völker, T. Wang, M. Hoppema, M. Losch, D. Wolf-Gladrow	Response of carbon fluxes to the southern annular mode: the role of export production and seasonality
10	Johnson R., P.G. Strutton, S.W. Wright, A. McMinn, K.M. Meiners	Three Improved Satellite Chlorophyll Algorithms for the Southern Ocean
11	Lasbleiz M., I. Closset, B. Quéguiner, K. Leblanc, D. Cardinal, J. Navez, M. Elskens	The biogenic silica cycle in relation with hydrodynamics in the area of interaction between the Antarctic Polar Front and the Kerguelen Plateau (KEOPS 2)
12	Merlivat L., J.Boutin, D.Antoine	In situ and satellite based estimates of marine productivity: constraints on the seasonal cycle of the Southern Ocean surface pCO ₂
13	Nicholson S, M Lévy, X Capet, J Jouanno, P Monteiro, S Swart and J Veitch	Primary production in the Southern Ocean: sensitivities to submesoscale dynamics and sub-seasonal atmospheric forcing. 3 Department of Oceanography, UCT, Private Bag, Rondebosch, 7700, South Africa
14	Roukaerts A, Cavagna AJ and Dehairs F	Nutrient uptake and primary production in the East Antarctic seaice zone (SIPEX 2 preliminary results)
15	Strutton P	The impact of the Southern Annular Mode on Southern Ocean physics and biogeochemistry
16	Llort J., A. Tagliabue, L. Bopp, S.-D. Ayata, J.B. Sallée, J. Lesommer, M. Lévy	Biological response to altered stratification due to climate change in the Southern Ocean

Primary Production in sea-ice

17	Tedesco L., E. Miettunen, B.W. An, J. Haapala	Towards a quantitative understanding of sea ice biogeochemistry
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Phytoplankton Functional Types

18	Chiba S, S D. Batten, K Sasaoka	Influence of the Pacific Decadal Oscillation on phytoplankton phenology and community structure in the western North Pacific
19	Fonseca Batista D, F Dehairs, L. Brunelli, C. Gil-Fernandez, M. Rembauville, D. Ribicic, T. Schwenke	Fixed-nitrogen and atmospheric N ₂ contribution to biological productivity along a North-South transect in the Eastern Atlantic Ocean

20	Harlay J., L. Chou, N. Van Oostende, K. Sabbe, A.V. Borges	Biogeochemistry and carbon mass balance of a coccolithophore bloom in the northern Bay of Biscay (June 2006)
21	Hopkins J, S Henson, A Poulton, S Painter, T Tyrrell	Using satellites to understand coccolithophore blooms
22	Milutinović S., Kostadinov T.S. and Marinov I.	Partitioning Phytoplankton Carbon Biomass into Three Size Groups Using Satellite Ocean Colour Observations
23	Lange P K, G Tilstone	Contribution of micro-phytoplankton to total primary production in the Atlantic gyres
24	Larouche P., M. Yayla, M. Starr	Evaluation of phytoplankton functional types algorithms for the complex optical waters of Hudson Bay
25	Lawrenz E, Huete-Ortega M, Suggett DJ, Geider RJ	The effects of nitrogen limitation on the electron requirement for carbon fixation in marine phytoplankton
26	Prowe AEF, M Pahlow, A Oschlies	Phytoplankton community effects on productivity changes in a global reduced mixing scenario
27	Robinson C, Ralph P, Suggett D, Szabo M and Doblin M	Comparison of photosynthetic efficiency using multi-colour fluorescence and carbon fixation by species of a light-stressed mixed phytoplankton community
28	Stec K.F., E. Scalco, M. Ferrante, C. Brunet, M. Ribera D'Alcalà, M. Montresor, D. Ludicone	Do life cycles participate in the maintenance of diatom diversity?

Benthic- pelagic coupling

29	Amar Y, M El Batoul Amar, B Djahed	First inventory and richness of the benthic community of the Gulf of Arzew
30	Brenner H., Braeckman U., Maysman F.	Controls on the CO ₂ system by benthic-pelagic coupling in the southern North Sea
31	Burt W, H Thomas, K Fennel, E Horne	Sediment-water column fluxes of carbon, oxygen and nutrients in Bedford Basin, Nova Scotia, inferred from 224Ra measurements
32	Champenois W, Lepoint G, Borges AV	Evaluation of gross primary production, community respiration, and net community production in various benthic communities (Posidonia oceanica seagrass meadow, Posidonia oceanica litter, epilithic macro-algae) in the Bay of Revellata (Corsica) using optodes
33	Dominguez R B, Guerra C C, Barbosa A B, Galvão H M	Phytoplankton primary production in shallow coastal ecosystems: a turbid estuary versus a multi-inlet lagoon (SE Portugal)
34	Elkalay K, Damsiri Z, Natij L, Khalil K, Loudiki M	Descriptive and prediction models of phytoplankton in the Oualdia lagoon (Moroccan Atlantic)
35	Houliez E., F. Lizon, S. Lefebvre, L. F. Artigas, F. G. Schmitt	Variability of phytoplankton photosynthetic activity in a macrotidal ecosystem (the Strait of Dover, eastern English Channel, France)
36	Natij L, Z Damsiri, K Elkalay	The summer phytoplankton along Oualidia lagoon (Atlantic-Morocco). Check-list.
37	Vaz N., M. Mateus, M.C. Sousa, S. Plecha, P.C. Leitão O, J.M. Dias	Modelling SST and chlorophyll patterns in a estuary-near coast system of Portugal: The Tagus case study
38	Sharifuzzaman SM, Hossain MS, Chowdhury SR, Chowdhury MZR and Sarker S	The estuarine phytoplankton community of Bangladesh

Primary production variability and coastal-offshore export in upwelling regions (IMBER Session)

39	Al-Azri A., Al-Hashmi K., Pointkovski S.	Response of phytoplankton biomass to seasonally varying physical forcing along the coast of Oman.
40	Aleksandrov S	Primary production of phytoplankton and chlorophyll concentration in waters of the Canary Upwelling

41	Aleksandrov S	Use of the surface chlorophyll concentrations for calculation of depth-integrated values of primary production and chlorophyll in water of the Canary Upwelling and the Atlantic Part of Antarctica
42	Atkins F, T Probyn, G Pitcher	Synoptic scale variability of phytoplankton community uptake rates in the southern Benguela upwelling system
43	Corredor-Acosta A., S. Hormazabal, C.E. Morales, I. Andrade, M. Correa-Ramirez	Phytoplankton phenology in shelf and slope waters of the upwelling region off central-southern Chile (35-38°S)
44	Krishna K. M.	Importance of physical factors on spatial and temporal variability of primary productivity in the Arabian Sea
45	Krug L. A., K. M. Silvano, A. B. Barbosa, P. Relvas, J. Luís, R. B. Dominguez, H. M. Galvão, T. Platt, and S. Sathyendranath	Effects of upwelling on phytoplankton variability off SW Iberia
46	Mihailov M.E., L. Buga, L. Boicenco, M.I. Tomescu - Chivu, V. Malciu, S. Stefan, G. Sarbu, G. Ganea	Upwelling and Algae Bloom events on the Romanian Black Sea Coast
47	Xu Zongun, Zhang Xuelei, Gao Chunlei, Zhu Mingyuan	Primary production in Eastern Indian Ocean during spring intermonsoon period in 2012
Impact of meso/submesoscale on Primary Production		
48	Albert A, J Le Sommer, M Lévy, and J Llort	Impact of mesoscale variability on mixed layer depth and phytoplankton bloom in Kerguelen region
49	Desmit X., G. EL Serafy, S. Gaytan, G. Lacroix	Probabilistic estimate of the uncertainty due to physical forcings in phytoplankton models
50	Goodman L.	The Turbulent Induced Biodynamical Interaction (TIBI) Effect
51	Hardman-Mountford N, R Brewin, F Dufois, M Feng	The influence of climate modes on phytoplankton variability in the Indian Ocean as revealed by earth observation
52	Lehahn Y, F D'ovidio, M Lévy, E Heifetz, Y Amitai, A Della Penna	On eddy permeability and the potential of horizontal eddy transport to affect primary production
53	Samuelsen A, L Bertino, E Simon	Spatial and temporal variability in chlorophyll, implications for model-validation and interpretation of data
Modelling		
54	Conchon A., P. Lehodey, I. Senina, J. Jouanno, O. Hernandez, R. Domokos, R. Kloser	Optimization and evaluation of a micronekton model with acoustic data
55	Daggers T, Gaytan S, Stolte W, Eppinga M, El Serafy GY	Improvement and validation of a primary production model using remote sensing
56	Das Mohan K. and Sujit K. Debsarma	Data Assimilation on Numerical Simulation of Storm Surges along Bay of Bengal and Bangladesh Coast
57	Perruche C., M. Gehlen, A. Daudin, A. El Moussaoui, E. Greiner and C. Ethé	Assessment of a global eddy-permitting biogeochemical hindcast of the ocean colour era
58	Fontana C, H Claustre, F D'Ortenzio	Optimal deployment of the BioArgo network: a modelling approach
59	Garnier F., P. Brasseur, J.M. Brankart, G. Candille, E. Cosme, J. Verron	Data assimilation in a state-of-the-art physical-biogeochemical model of the North Atlantic: toward synergistic usage of Sea Level, SST and Ocean Colour observations
60	Hahn-Woernle L., H. A. Dijkstra, H. J. Van Der Woerd	Constraints on values of biological parameters by observed turbulence in a quasi-2D phytoplankton model of the North Atlantic
61	Lindemann C., M.A. St. John, J.O. Backhaus	Influences of deep convection on phytoplankton winter dynamics
62	Losa S.N., Völker C., Losch M., Hohn S.	Estimating Oceanic Export Production based on 3D coupled physical-biogeochemical modelling

63	Ozer T, I Gertman, S Brenner, R Goldman	Simulating the seasonal dynamics of a disrupted coastal environment using an NPZ Ecosystem Model
64	Romanou A and Watson W. G	Sensitivity of the ocean biological pump to parameterizations of the recycling matter
65	Séférian, L Bopp, M Gehlen, D Swingedouw, J Mignot, E Guilyardi, J Servonnat	Multi-year prediction of Marine Productivity in the Tropical Pacific
66	Xie Y., B. Huang, L. Lin	A preliminary assessment of use the VGPM models to estimate the ocean primary production in the China Sea
67	Yool A, K Popova, T Anderson	Climate and ocean acidification impacts in an intermediate complexity global ecosystem model (MEDUSA-2.0)

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68	Wang B, Q Liao, H A. Bootsma, J H. Fillingham	In situ turbulence measurement and its relation to air-water gas exchange rate
69	Barnes M.K., D. Antoine	Biogeochemical Inferences from the Diel Variability of Optical Properties in the NW Mediterranean
70	Binetti U, J Kaiser, K Heywood	Using gliders to measure seasonal variability in dissolved oxygen at a time series station in the North Atlantic
71	Capuzzo E, R Forster, T Silva, D Stephens, J Barry	Long-term variability in the primary production of the North Sea
72	Cetinic I., R. Weatherbee, A. C. Thomas, M. J. Perry	Evaluating estimates of remote sensing Primary Productivity in the Gulf of Maine using a Slocum Glider
73	Chen Gui-Ying, Xiao-Dong Shang, Shu-Min Lian, Yun Jiao Wang	Observing turbulence modulation of vertical distribution of Chl-a in northern South China Sea
74	Claquin P., C. Napoléon, V. Raimbault, L. Fiant, L. Lampert, P.Riou	Dynamics of primary production in the English Channel - Use of opportunity ships to access to high spatiotemporal scale
75	Damsiri Z, Natij L, Elkalalay K, Loudiki M	Spatio-temporal distribution of nutrients at Oualidia lagoon (Atlantic Moroccan coast)
76	Dpgliotti A. I. , V. Lutz, V. Segura	Improving the estimation of primary production using remote sensing data in the Argentine continental shelf and shelf-break regions
77	Drozdowska V., N. Fateeva, L. Poryvkina	Analysis of chlorophyll a concentration received with spectrofluorimeter FLUO-IMAGER M53b during the research cruise on April 2010
78	Ediang O. A, A.A Ediang	Marine records off the coast of Africa: a case of mechanisms and consequences of past and present climate changes over West Africa coast and its effect on primary production
79	Finenko Z., Suslin V., Churilova T.	Seasonal and inter-annual dynamics of chlorophyll concentration and primary production in the Black Sea
80	Gudmundsson K, M J Perry, M Alkire, N Briggs, I Cetinic, E Dásaro, C M. Lee, E Rehm	Estimates of Net Phytoplankton Productivity (NPP) and Net Community Productivity (NCP) from a Lagrangian float
81	Kaiser J, Gist N, Gloël J, Robinson C, Stephens J, García-Martín EE	Metabolic balance of the Atlantic subtropical gyres
82	Khammeri Y , S Ussher, K Buck	The Effect of Atmospheric Dust on Phytoplankton Growth in the Sargasso Sea
83	Lazzari P., G. Cossarini, C. Solidoro	Temporal and spatial variability of plankton chlorophyll and primary production in the Mediterranean Sea
84	Mangalaa KR, V.V.S.S. Sarma	Influence of river discharge on plankton metabolic balance in the coastal Bay of Bengal
85	Meng Xia	The response of a Gulf estuary primary production to wind forcing and river discharge
86	Moore, C.M., Bibby, T.S., Hickman, A.E., Macey, A.I.	Variability in photosynthetic reaction centre to chlorophyll ratios and electron-carbon coupling in natural phytoplankton populations: implications for Fast Repetition Rate fluorometry based productivity algorithms

87	Noh J.H., S.H. Son, D.H. Choi, S.M. An, S.Y. Park, C.M. Lee	Influence of light attenuation on the Spring Phytoplankton Primary Production in the northern East China Sea
88	Oxborough K, V (Hoi Ga) Chan, D J Suggett, G Silsbe, J Kromkamp	Recent advances in the methods used to analyse Fast Repetition Rate fluorometry (FRRf) data could significantly improve the routine estimation of gross primary production on wide spatial and temporal scales
89	Pennington J.T., M. Messié, R. Michisaki, F.P. Chavez	A ship-based record of temperature, salt, nitrate, chlorophyll and primary production over 1989-2011 associated with North Pacific climate indices
90	Prokopenko M., D. Hammond, W. Berelson, L. Yeung, W. Haskell, R. Stanley	Net Community and Gross primary production and carbon export in the transition zone between Peru Current and South Pacific Gyre, as determined with dissolved O ₂ /Ar ratios and oxygen triple isotope composition of O ₂
91	Putri M.R. and P. Kemili	The Influence of Ocean Dynamics to Net Primary Production In The Banda Sea
92	Romero E, F Peters, C Marrasé, Ò Guadayol	The interplay between nutrient load, N partitioning and turbulence: three key factors in the dynamics of coastal plankton
93	Rumyantseva A, S Henson, A Martin, G Damerell, K Heywood, J Kaiser, S Painter, J Taylor	Evaluation of chlorophyll a response to the light and water column stratification variability in the temperate latitudes of the North Atlantic Ocean using autonomous underwater Seagliders
94	Sauzède R., H. Claustre, C. Jamet J. Uitz, H. Lavigne, F. Dórtenzio	Towards a 3D global climatology for chlorophyll-a based on a calibration of in situ fluorescence profiles using a neural network
95	Silsbe G.M., J.C. Kromkamp, D. Smythe-Wright, S. Simis	Highly resolved measures of photosynthetic electron transport in European Coastal Waters
96	Wang Z, L Goodman	What is the impact of turbulent mixing on the formation, persistence and decay of thin phytoplankton layers?
97	Wang B, Q Liao, H A. Bootsma, J H. Fillingham	In situ turbulence measurement and its relation to air-water gas exchange rate
98	Cherrier J., S. Valentine, W. Jeffrey, J. Marra	Light-Mediated Release of Dissolved Organic Carbon by Phytoplankton: Implications for Carbon Cycling
99	Yunev O.A.	The anthropogenic eutrophication of the Black Sea: quantitative evaluation, mechanisms and its role in the redistribution of organic matter among the main pelagic trophic chains
100	Milchakova N.A., Mironova N.V., Alexandrov V.V.	Causes and effects of the long-term changes in the bottom vegetation of Kazachya Bay (Crimea, the Black Sea)

Satellite

101	Radenac M.-H., F. Léger, A. Singh, T. Delcroix, C. Menkes	Spatial structures of surface chlorophyll in the equatorial Pacific during recent El Niño events
102	Gallisai R., F. Peters	Relationships between aerosols and surface chlorophyll concentration in the Mediterranean Sea.
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