

Ocean Carbon From Space Schedule – Programme Overview

Day 1 Opening session Phytoplankton Carbon (PC) Dissolved Organic Carbon (DOC)	Day 2 Inorganic Carbon and fluxes at the ocean interfaces (IC)	Day 3 Particulate Organic Carbon (POC)	Day 4 Phytoplankton and Primary Production (PP)	Day 5 Crosscutting themes: Blue Carbon (BC) Extreme Events (EE) Carbon Budget Closure (CBC) Closing session
Session 1.1	Session 2.1	Session 3.1	Session 4.1	Session 5.1
10:30-12:30 GMT	08:00-10:50 GMT	12:00-14:20 GMT	08:00-09:50 GMT	12:30-13:55 GMT
5' Time to join workshop 10' Welcome ESA 5' Workshop Organisation 20' Workshop Introduction 20' Keynote 1 15' Break 15' Invited talk on the Ocean Carbon Observing System 15' EC Ocean Carbon Initiatives 15' NASA Ocean Carbon Initiatives	5' Intro Session Chairs IC 90' Oral presentations IC 15' Break 60' Poster session 2	5' Intro Session Chairs POC 60' Oral presentations POC 15' Break 60' Poster session 3	5' Intro Session Chairs PP 30' Keynote 4 15' Oral presentations PP 15' Break 45' Oral presentations PP	5' Intro Session Chairs EE 60' Oral presentations EE 20' Discussion EE
Session 1.2	Session 2.2	Session 3.2	Session 4.2	Session 5.2
13:30-18:00 GMT	15:00-17:30 GMT	16:00-18:30 GMT	14:00-17:00 GMT	15:00-18:15 GMT
5' Intro Session Chairs PC 60' Oral presentations PC 20' Discussion PC 20' Break 5' Intro Session Chairs DOC 60' Oral presentations DOC 20' Discussion DOC 15' Break 60' Poster session 1	30' Keynote 2 30' Oral presentations IC 15' Break 30' Oral presentations IC 45' Discussion IC	30' Keynote 3 30' Oral presentations POC 15' Break 30' Oral presentations POC 45' Discussion POC	60' Oral presentations PP 45' Discussion PP 15' Break 60' Poster session 4	5' Intro Session Chairs BC 60' Oral presentations BC 20' Discussion BC 15' Break 5' Intro Closing session 20' Keynote 5 CBC 20' Keynote 6 50' Final Discussion
Total duration = 6:30h	Total duration = 5:05h	Total duration = 4:50h	Total duration = 4:50h	Total duration = 04:40h

Ocean Carbon From Space Workshop – Programme Schedule

Day 1

Session 1.1 – Opening

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
10:30-10:35		Time to join workshop			
10:35-10:45	11:35-11:45 (+1)	Opening session	Welcome ESA	Rio, Marie-Helene	ESA-ESRIN, Italy
10:45-10:50	10:45-10:50 (+0)	Opening session	Workshop Organisation	Kulk, Gemma	Plymouth Marine Laboratory, UK
10:50-11:10	10:50-11:10 (+0)	Opening session	Workshop Introduction	Brewin, Bob	University of Exeter, UK
11:10-11:30	12:10-12:30 (+1)	Opening session – Keynote 1 (182)	The ocean carbon sink: Status quo, uncertainties and known unknowns in the Global Carbon Budget	Hauck, Judith (1); Bakker, Dorothee C.E. (2); Friedlingstein, Pierre (3); LeQuéré, Corinne (4); Olsen, Are (5)	1: Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Germany; 2: School of Environmental Sciences, University of East Anglia, Norwich, United Kingdom; 3: College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter EX4 4QF, UK; 4: Tyndall Center for Climate Change Research, University of East Anglia, Norwich, United Kingdom; 5: Geophysical Institute, University of Bergen and Bjerknes Centre for Climate Research, Bergen, Norway
11:30-11:45		Break			
11:45-12:00	11:45-12:00 (+0)	Opening session – Invited talk	The Ocean Carbon Observing system, its current status, challenges and needs	Richard Sanders	NORCE, Norway
12:00-12:15	13:00-13:15 (+1)	Opening session – Invited talk	European Commission Ocean Carbon Initiatives	Lorinczi, Larisa	European Commission

12:15-12:30	07:15-07:30 (-5)	Opening session – Invited talk	NASA Ocean Carbon Initiatives	Lorenzoni, Laura	NASA, USA
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Session 1.2 - Phytoplankton Carbon and Dissolved Organic Carbon

Phytoplankton Carbon chairs: Astrid Bracher, Aimee Neeley, Emanuele Organelli

Dissolved Organic Carbon chairs: Cédric Fichot, Dennis Hansell

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
13:30-13:35		Session introduction	Phytoplankton Carbon	Session chairs	
13:35-13:50	15:35-15:50 (+2)	117	Exploring Causal Variability in Phytoplankton Backscatter in the Southern Ocean	Lain, Lisl Robertson; Thomalla, Sandy	Centre for Scientific & Industrial Research, South Africa
13:50-14:05	16:50-17:05 (+3)	148	Estimation of Phytoplankton Levels in Global Waters Using Supervised Machine Learning	Tiwari, Surya Prakash (1); Adhikary, Subhrangshu (2); Banerjee, Saikat (3)	1: King Fahd University of Petroleum and Minerals (KFUPM), Dhahran 31261, Saudi Arabia; 2: Department of Computer Science and Engineering, Dr. B.C. Roy Engineering College, Durgapur, West Bengal, India - 713206; 3: Department of Remote sensing, Director, WINGBOTICS, Baghajatin, Kolkata - 700086, West Bengal, India
14:05-14:20	15:05-15:20 (+1)	118	Satellite Signature of Phytoplankton in Ocean Fronts	Haëck, Clément (1); Lévy, Marina (1); Bopp, Laurent (2)	1: LOCEAN (IPSL), France; 2: LMD (ENS), France
14:20-14:40	09:20-09:40 (-5)	122	Phytoplankton and POC Biomass Seasonality in the Atlantic Ocean Derived from Backscattering and Absorption Based Satellite Algorithms	Kochetkova, Ekaterina (1); Marinov, Irina (1); Kostadinov, Tihomir (2); Roy, Shovonlal (3)	1: University of Pennsylvania, United States of America; 2: California State University San Marcos, United States of America; 3: University of Reading, United Kingdom
14:40-15:00		Discussion	Phytoplankton Carbon	Session chairs, speakers, all attendees	
15:00-15:20		Break			
15:20-15:25		Session introduction	Dissolved Organic Carbon	Session chairs	

15:25-15:40	16:20-16:35 (+1)	194	Estimating DOC from space	Laine, Marko (1); Jönsson, Bror (2); Kulk, Gemma (2); Sathyendranath, Shubha (2)	1: Finnish Meteorological Institute, Finland; 2: Plymouth Marine Laboratory, United Kingdom
15:40-15:55	10:35-10:50 (-5)	158	High Frequency Land-Sea Exchanges of Carbon and Other Biogeochemical Constituents with NASA's Geostationary Littoral Imaging and Monitoring Radiometer (GLIMR)	Mannino, Antonio (1); Salisbury, Joseph (2); Vandermeulen, Ryan (3)	1: NASA Goddard Space Flight Center, United States of America; 2: University of New Hampshire, United States of America; 3: SSAI/NASA Goddard Space Flight Center, United States of America
15:55-16:10	10:50-11:05 (-5)	129	Recent Progress in the Quantification of CDOM Photobleaching to Improve the Remote Sensing of DOC in the Global Surface Ocean	Zhu, Xiaohui; Fichot, Cédric	Boston University, United States of America
16:10-16:25	09:05-09:20 (-7)	157	A New Method to Estimate DOC in the Global Open Ocean	Bonelli, Ana Gabriela (1); Loisel, Hubert (2,3); Vantrepotte, Vincent (2); Jorge, Daniel (2); Mangin, Antoine (4); Aumont, Olivier (5); Demaria, Julien (4)	1: Arizona State University, United States of America; 2: Univ. Littoral Côte d'Opale, Univ. Lille, CNRS, IRD, UMR 8187, LOG, Laboratoire d'Océanologie et de Géosciences, F 59000 Lille, France; 3: Hanoi International Laboratory of Oceanography, University of Science and Technology of Hanoi, Vietnam Academy of Science and Technology, Cau Giay, Vietnam.; 4: ACRI-ST, 260 Route du Pin Montard, Sophia-Antipolis, 06410 Biot, France.; 5: Sorbonne Université, CNRS, IRD, MNHN, LOCEAN-IPSL, Paris, France
16:25-16:45		Discussion	Dissolved Organic Carbon	Session chairs, speakers, all attendees	
16:45-17:00		Break			
17:00-18:00	12:00-19:00 (-5, +0, +1)	Poster session 1			

Poster session 1

Time (GMT)	Local time (+/- GMT)	ID Theme	Title	Author(s)	Affiliation
17:00-18:00	18:00-19:00 (+1)	107 PP	HPLC Analysis of Phytoplankton Pigments: An Inter-laboratory Comparison	Canuti, Elisabetta	Joint Research Centre - European Commission, Italy
17:00-18:00	18:00-19:00 (+1)	108 IC	Impact of North Brazil Current rings on air-sea CO ₂ flux variability in winter 2020	Olivier, Léa (1); Boutin, Jacqueline (1); Lefèvre, Nathalie (1); Reverdin, Gilles (1); Landschützer, Peter (2); Speich, Sabrina (3); Karstensen, Johannes (4); Ritschel, Markus (2); Wanninkhof, Rik (5)	1: LOCEAN-IPSL, Sorbonne Université-CNRS-IRD-MNHN, Paris, France; 2: Max Planck Institute for Meteorology, Hamburg, Germany; 3: Laboratoire de Météorologie Dynamique, ENS-Ecole Polytechnique-CNRS-Sorbonne Université, Paris, France; 4: GEOMAR Helmholtz Centre for Ocean Research, Kiel, Germany; 5: Atlantic Oceanographic & Meteorological Laboratory of NOAA, Miami, USA
17:00-18:00	12:00-13:00 (-5)	136 CBC	Uncertainty Quantification Activities of Geophysical Retrievals within the PACE Mission	Ibrahim, Amir (1); Sayer, Andrew (1,2); Mckinna, Lachlan (3); Knobelspiesse, Kirk (1); Zhang, Minwei (1,4); Gao, Meng (1,5); Franz, Bryan (1); Werdell, Jeremy (1)	1: Ocean Ecology Lab, Goddard Space Flight Center, NASA, USA; 2: University of Maryland Baltimore County, USA; 3: Go2Q Pty Ltd, Sunshine Coast, Australia; 4: Science Applications International Corporation, USA; 5: Science Systems and Applications, Inc., USA
17:00-18:00	12:00-13:00 (-5)	138 IC	Remote Sensing for Ocean Acidification: Estimation of Dissolved Inorganic Carbon using a Neural Network Approach.	Pinkham, Suny; Balch, William M; Mitchell, Catherine	Bigelow Laboratory for Ocean Sciences, United States of America
17:00-18:00	12:00-13:00 (-5)	140 PC	Mechanistic Drivers of the Particulate Backscattering-to-Chlorophyll a Relationship and Bias-assessment of Phytoplankton Carbon Algorithms.	Serra-Pompei, Camila (1); Hickman, Anna (2); Britten, Gregory L. (1); Dutkiewicz, Stephanie (1)	1: Massachusetts Institute of Technology, United States of America; 2: University of Southampton, UK
17:00-18:00	18:00-19:00 (+1)	143 PC	A Scattering-sensitivity Analysis Based on Radiative Transfer for Modelling the	Bi, Shun; Hieronymi, Martin; Röttgers, Rüdiger; Kordubel, Katharina	Helmholtz-Zentrum Hereon, Germany

			Optical Reflectance of Phytoplankton Function Types		
17:00-18:00	18:00-19:00 (+1)	146 IC	In Situ Monitoring of Carbonate System Variables in the Eastern Mediterranean to Validate Regional Algorithms, Remote Sensing and Model Products.	Stamataki, Natalia (1,2); Frangoulis, Constantin (1); Pettas, Manos (1); Giannoudi, Louisa (1); Tsiaras, Kostas (1); Christodoulaki, Sylvia (1); King, Andrew Luke (3); Seppälä, Jukka (4); Thyssen, Melilotus (5); Petihakis, George (1)	1: Hellenic Centre for Marine Research (HCMR), Greece; 2: Department of Physics, Section of Environmental Physics and Meteorology, National and Kapodistrian University of Athens, Greece; 3: Norwegian Institute for Water Research (NIVA), Norway; 4: Finnish Environment Institute (SYKE), Finland; 5: French National Centre for Scientific Research, Mediterranean Institute of Oceanography (CNRS-MIO), France
17:00-18:00	12:00-13:00 (-5)	155 PP	Reconciling Uncertainty in Oceanic Primary Productivity from Sea to Space	Vandermeulen, Ryan (1,2); Chaves, Joaquín (1,2); Cetinić, Ivona (1,3); Neeley, Aimee (1,2); Smith, Emily (4); Westberry, Toby (5)	1: National Aeronautics and Space Administration, United States of America; 2: Science Systems and Applications, Inc., United States of America; 3: Morgan State University, United States of America; 4: National Oceanic and Atmospheric Administration, United States of America; 5: Oregon State University, United States of America
17:00-18:00	18:00-19:00 (+1)	170 PP	Impacts Of Pyrogenic Aerosols On Plankton Ecosystems	Llort, Joan	Barcelona Supercomputing Centre, Spain
17:00-18:00	12:00-13:00 (-5)	171 DOC	The Contribution Of Dissolved Organic Carbon Export To The Carbon Budget In The Conterminous United States	Wei, Xinyuan	Oak Ridge National Laboratory, United States of America
17:00-18:00	17:00-18:00 (+0)	180 IC	Satellite Observation-Based Ice Datasets With Characterised Uncertainties are Critical for Understanding Polar Air-Sea CO ₂ Fluxes	Watts, Jennifer (1); Bell, Thomas G. (2); Anderson, Karen (3); Prytherch, John (4); Butterworth, Brian J. (5,6); Else, Brent (7); Miller, Scott (8); Holding, Thomas (9); Shutler, Jamie (1)	1: College of Life and Environmental Sciences, University of Exeter, United Kingdom; 2: Plymouth Marine Laboratory, Plymouth, Devon, UK.; 3: Environment and Sustainability Institute, University of Exeter, United Kingdom; 4: Department of Meteorology, Stockholm University, Sweden.; 5: Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado, USA; 6: NOAA Physical Sciences Laboratory, Boulder, Colorado, USA; 7: Department of Geography, University of Calgary, Canada; 8: Atmospheric Sciences Research Center, University

					of Albany (State University of New York), USA.; 9: Max Planck Institute for Evolutionary Anthropology, Deutscher Platz 6, 04103 Leipzig
17:00-18:00	17:00-18:00 (+0)	192 PP	Assessing Net Growth of Phytoplankton Biomass on Hourly to Annual Timescales Using the Geostationary Ocean Colour Instrument	Jönsson, Bror Fredrik (1); Salisbury, Joseph (2); Mannino, Antonio (3); Kim, Wonkook (4); Goes, Joaquim I. (5); Concha, Javier A. (6)	1: Plymouth Marine Laboratory, United Kingdom; 2: Ocean Processes Analysis Laboratory, University of New Hampshire, Durham, NH, USA; 3: Ocean Ecology Laboratory, NASA Goddard Space Flight Center, Greenbelt, MD, USA; 4: Department of Civil and Environmental Engineering, Pusan National University, Korea; 5: Department of Marine Biology and Paleoenvironment, Lamont Doherty Earth Observatory at Columbia University, Palisades, New York, USA; 6: Istituto di Scienze Marine, Consiglio Nazionale delle Ricerche, Rome, Italy
17:00-18:00	17:00-18:00 (+0)	196 PC	Phytoplankton Carbon from Space	Sathyendranath, Shubha (1); Kulk, Gemma (1); Brewin, Robert (2); Jackson, Thomas (1); Dingle, James (1); Rio, Marie-Hélène (3); Platt, Trevor (1)	1: Plymouth Marine Laboratory, United Kingdom; 2: University of Exeter, United Kingdom; 3: European Space Agency, Frascati, Rome, Italy

Day 2

Session 2.1 – Inorganic Carbon and fluxes at the ocean interfaces

Chairs: Catherine Mitchell, Thomas Bell

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
08:00-08:05		Session introduction	Inorganic Carbon and fluxes at the ocean interfaces	Session chairs	
08:05-08:20	19:05-19:20 (+11)	115	Carbon From Space: Maximising Biogeochemical Observations at SOTS	Wynn-Edwards, Cathryn A (1,2); Eriksen, Ruth (1,2); Shadwick, Elizabeth H (1,2); Jansen, Peter (2); Davies, Diana M (1,2); Trull, Thomas W (1,2)	1: 1 Australian Antarctic Program Partnership, Institute for Marine and Antarctic Studies, University of Tasmania, Hobart, TAS, Australia; 2: Oceans and Atmosphere, Commonwealth Scientific and Industrial Research Organisation, Hobart, TAS, Australia
08:20-08:35	11:20-11:35 (+3)	187	Remote Estimation of Air-Sea pCO ₂ Flux in the East Mediterranean Sea between 2003 and 2020	Ibello, Valeria; Fach, Bettina; Örek, Hasan	Middle East Technical University, Institute of Marine Science, Turkey
08:35-08:50	09:35-09:50 (+1)	176	Near-Term Predictions of the Carbon Sinks and Atmospheric CO ₂ Growth	Ilyina, Tatiana; Li, Hongmei; Spring, Aaron	Max Planck Institute for Meteorology, Germany
08:50-09:05	09:50-10:05 (+1)	142	Characteristics of Compounding Ocean Acidification Extremes and Marine Heatwaves from Satellite pH	Gregor, Luke; Gruber, Nicolas	Dep. of Environmental Systems Science, ETH Zürich, Switzerland
09:05-09:20	09:05-09:20 (+0)	164	A Workflow For Combining In Situ And Satellite Data For Carbon Dioxide Air-Sea Flux Calculations	Woolf, David Kevin	Herriot-Watt University, United Kingdom
09:20-09:35	09:20-09:35 (+0)	Invited talk	SOLAS carbon activities - challenges and future opportunities	Thomas Bell	University of Exeter, UK
09:35-09:50		Break			
09:50-10:50	09:50-20:50 (+0, +1, +6, +7, +9, +10)	Poster session 2			

Session 2.2 - Inorganic Carbon and fluxes at the ocean interfaces

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
15:00-15:30	15:00-15:30 (+0)	Keynote 2	Advances in satellite based ocean carbon assessments will help close global carbon budgets	Shutler, Jamie	College of Life and Environmental Sciences, University of Exeter, Streatham campus, United Kingdom
15:30-15:45	15:30-15:45 (+0)	195	Time Series Satellite Observation-based Estimates of Land to Ocean Flow of Carbon from the Amazon	Sims, Richard Peter (1); Holding, Thomas (2); Land, Peter (3); Perry, Christopher (4); Shutler, Jamie (1)	1: Centre for Geography and Environmental Science, College of Life and Environmental Sciences, University of Exeter, Penryn campus, United Kingdom; 2: Max Planck Institute, Leipzig, 04103, Germany; 3: Plymouth Marine Laboratory, Prospect Place, Plymouth, PL13DH, United Kingdom; 4: College of Life and Environmental Sciences, University of Exeter, Streatham campus, United Kingdom
15:45-16:00	10:45-11:00 (-5)	137	Global Variability in Light Scattering By Different Coccolithophore Species: Impacts on Particulate Inorganic Carbon Remote Sensing	Mitchell, Catherine; Pinkham, Sunny; Balch, William M	Bigelow Laboratory for Ocean Sciences, United States of America
16:00-16:15		Break			
16:15-16:30	11:15-11:30 (-5)	188	Attribution of Space-Time Variability in Global-Ocean Dissolved Inorganic Carbon	Carroll, Dustin (2); Menemenlis, Dimitris (3); Dutkiewicz, Stephanie (1); Lauderdale, Jonathan Maitland (1); Hill, Christopher (1)	1: Massachusetts Institute of Technology, United States of America; 2: Moss Landing Marine Laboratories, San Jose State University, USA; 3: Jet Propulsion Laboratory, California Institute of Technology, USA
16:30-16:45	09:30-09:45 (-7)	102	Are Increasing Winds Creating an Ocean Carbon Blindspot?	Russell, Joellen (1); Long, David (2)	1: University of Arizona, United States of America; 2: Brigham Young University, United States of America
16:45-17:30		Discussion	Inorganic Carbon and fluxes at the ocean interfaces	Session chairs, speakers, all attendees	

Poster session 2

Time (GMT)	Local time (+/- GMT)	ID Theme	Title	Author(s)	Affiliation
09:50-10:50	17:50-18:50 (+8)	106 PP	Estimation of size-fractionated primary production and phytoplankton carbon in South China Sea	Zhou, Wen; Cao, Wenxi; Zheng, Wendi; Deng, Lin; Zhao, Hongwuyi	South China Sea Institute of Oceanology, People's Republic of China
09:50-10:50	10:50-11:50 (+1)	113 IC	Development Of A Machine Learning Approach For The Estimation Of The Marine CO2 Partial Pressure Over The Global Coastal Ocean In The Frame Of The CO2COAST Project	El Hourany, Roy (1); Loisel, Hubert (1); S.F. Jorge, Daniel (1); Vantrepotte, Vincent (1); Jamet, Cédric (1); Demaria, Julien (2); Bretagnon, Marine (2); Mangin, Antoine (2)	1: Univ. Littoral Cote d'Opale, CNRS, Univ. Lille, UMR 8187 - LOG - Laboratoire d'Océanologie et de Géosciences; 2: ACRI-ST
09:50-10:50	17:50-18:50 (+8)	130 PP	Estimation of Primary Production from the Absorption of Phytoplankton and Photosynthetically Active Radiation in the South China Sea	Zhao, Hongwuyi	State Key Laboratory of Tropical Oceanography (LTO), South China Sea Institute of Oceanology, Chinese Academy of Sciences, Guangzhou 511458, China
09:50-10:50	10:50-11:50 (+1)	131 IC	Evolution of Coccolithophores bloom dynamics in the North Sea: observations from Remote Sensing, Continuous Plankton Recorder and FerryBoxes	Kordubel, Katharina (1); Baschek, Burkard (2); Bi, Shun (1); Hieronymi, Martin (1); Möller, Klas O (1); Voynova, Yoana G (1)	1: Helmholtz Zentrum hereon, Geesthacht (Germany); 2: German Oceanographic Museum, Stralsund (Germany)
09:50-10:50	17:50-18:50 (+8)	132 POC	Subsurface POC Retrieval From Spaceborne Lidar	Chen, Peng; Zhang, Zhenhua	Second Institute of Oceanography, Ministry of Natural Resource, China, People's Republic of
09:50-10:50	19:50-20:50 (+10)	133 PC	Support For The Evolution Of IOP Retrievals In The PACE Era	McKinna, Lachlan (1); Cetinić, Ivona (2,3); Werdell, Jeremy (2)	1: Go2Q Pty Ltd; 2: NASA GSFC; 3: MSU/GESTAR
09:50-10:50	17:50-18:50 (+8)	135 POC	Impacts Of Typhoon Events On The Dynamics Of Chlorophyll-a And Particulate Organic Carbon In The Yellow Bohai Sea	Wang, Xiaowen; Wang, Xiujun	College of Global Change and Earth System Science, Beijing Normal University, China

09:50-10:50	17:50-18:50 (+8)	147 DOC	Dissolved Organic Carbon distribution and decadal variability in the Long Island Sound ecosystem, through integration of ENVISAT/MERIS and Sentinel-3/OLCI observations	Cao, Fang (1,2); Tzortziou, Maria (2)	1: East China Normal University, China, People's Republic of; 2: City University of New York-The City College
09:50-10:50	17:50-18:50 (+8)	149 PC	Assessing Remote Sensing Algorithms for the Diffuse Attenuation Coefficients in the Ultraviolet Bands	Wang, Yongchao	Xiamen University, China, People's Republic of
09:50-10:50	18:50-19:50 (+9)	161 PP	The Nutrient Supply and Mixing Control the Primary Production Seasonality in the Subarctic Pacific	Hirawake, Toru (1); Kaneko, Takuro (2); Nishioka, Jun (3); Obata, Hajime (4); Yasuda, Ichiro (4)	1: National Institute of Polar Research, Japan; 2: Graduate School of Fisheries Sciences, Hokkaido University, Japan; 3: Institute of Low Temperature Science, Hokkaido University, Japan; 4: Atmosphere and Ocean Research Institute, The University of Tokyo, Japan
09:50-10:50	17:50-18:50 (+8)	165 BC	Dynamics of Litterfall and Litter Decomposition in Restored Mangrove Forests of Abandoned Aquaculture Ponds	Pradisty, Novia Arinda	BRIN, Indonesia
09:50-10:50	09:50-10:50 (+0)	173 PP	Uncertainty Estimates For Satellite-based Computations Of Marine Primary Production	Kulk, Gemma (1); Sathyendranath, Shubha (1,2); Dingle, James (1); Jackson, Thomas (1)	1: Earth Observation Science and Applications, Plymouth Marine Laboratory, Prospect Place, The Hoe, Plymouth PL1 3DH, UK; 2: National Centre for Earth Observation, Plymouth Marine Laboratory, Prospect Place, The Hoe, Plymouth PL1 3DH, UK
09:50-10:50	09:50-10:50 (+0)	193 IC	Evaluation Of Ocean Colour Approaches For Estimating The Particulate Inorganic Carbon In The Oceans	Kong, Christina Eunjin; Sathyendranath, Shubha; Kulk, Gemma; Jackson, Thomas	Plymouth Marine Laboratory, Plymouth, United Kingdom

Day 3

Session 3.1 - Particulate Organic Carbon

Chairs: Marti Gali, Tihomir Kostadinov, Dariusz Stramski

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
12:00-12:05		Session introduction	Particulate Organic Carbon	Session chairs	
12:05-12:20	20:05-20:20 (+8)	119	Remote Sensing Observation of Particulate Organic Carbon Based on Optical Identification of Complex Particle Types in Turbid Coastal Oceans of China	Li, Mengyu; Wei, Xiaodao; Sun, Xuerong; Shen, Fang	State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai 200241, China
12:20-12:35	13:20-13:35 (+1)	105	Continuous Ocean Colour Products For Ocean, Coastal And Inland Waters	Hieronymi, Martin; Röttgers, Rüdiger	Helmholtz-Zentrum Hereon, Germany
12:35-12:50	12:35-12:50 (+0)	183	Evaluation Of Global Particulate Organic Carbon Estimates From Ocean Colour	Kong, Christina Eunjin (1); Sathyendranath, Shubha (1); Jackson, Thomas (1); Kulk, Gemma (1); Jönsson, Bror (1); Brewin, Bob (2); Loisel, Hubert (3)	1: Plymouth Marine Laboratory, Plymouth, United Kingdom; 2: University of Exeter, Penryn, Cornwall; 3: Université du Littoral Côte d'Opale, Dunkerque, France
12:50-13:05	13:50-14:05 (+1)	162	Estimation of Particulate Organic Carbon in the Ocean with Machine Learning	Garcia-Jimenez, Jorge (1,2); Ruescas, Ana Belén (1); Amorós-López, Julia (1)	1: Universitat de València, Spain; 2: CSIC
13:05-13:20		Break			
13:20-14:20	13:20-20:20 (+0, +1, +6)	Poster session 3			

Session 3.2 - Particulate Organic Carbon

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
16:00-16:30	11:00-11:30 (-5)	Keynote 3 (152)	Sticky Wicket: Carbon for PACE	Cetinic, Ivona (1,2); Chaves, Joaquin E. (1,3); Mannino, Antonio (1); McKinna, Lachlan (4); Neeley, Aimee (1,3); Novak, Michael G. (1); Proctor, Christopher W. (1,3); Sanjuan Calzado, Violeta (1,5); Soto Ramos, Inia M. (1,2); Vandermeulen, Ryan A. (1,3); Werdell, Jeremy (1)	1: NASA GSFC, United States of America; 2: MSU; 3: SSAI; 4: Go2Q Pty Ltd; 5: UMBC
16:30-16:45	17:30-17:45 (+1)	145	The Underwater Light Field: Lessons Learnt from In Situ BGC-Argo Autonomous Profilers and Synergies with Earth Observation	Organelli, Emanuele (1); Leymarie, Edouard (2); Uitz, Julia (2); D'Ortenzio, Fabrizio (2); Xing, Xiaogang (3); Boss, Emmanuel (4); Zielinski, Oliver (5,6); Claustre, Hervé (2)	1: National Research Council of Italy (CNR), Institute of Marine Sciences (ISMAR), Rome, Italy; 2: CNRS & Sorbonne Université, Laboratoire d'Océanographie de Villefranche, Villefranche sur mer, France; 3: State Key Laboratory of Satellite Ocean Environment Dynamics, Second Institute of Oceanography, Hangzhou, China; 4: School of Marine Sciences, University of Maine, Orono, USA; 5: Carl von Ossietzky University Oldenburg, Institute for Chemistry and Biology of the Marine Environment (ICBM), Center for Marine Sensors (ZfMarS), Wilhelmshaven, Germany; 6: German Research Center for Artificial Intelligence (DFKI), Marine Perception Research Department, Oldenburg, Germany
16:45-17:00	11:45-12:00 (-5)	114	A Multivariable Model for Estimating Particulate Organic Carbon Concentration in Marine Environments Using Optical Backscattering and Chlorophyll-a Measurements	Koestner, Daniel (1); Stramski, Dariusz (2); Reynolds, Rick A. (2)	1: Naval Research Laboratory, United States of America; 2: Scripps Institution of Oceanography, University of California San Diego, United States of America
17:00-17:15		Break			

17:15-17:30	09:15-09:30 (-8)	112	An OC-CCI-based Ocean Colour Dataset of Particle Size Distribution and Phytoplankton Carbon Using a 2-component Coated Spheres Algorithm	Kostadinov, Tihomir Sabinov (1); Robertson-Lain, Lisl (2); Kong, Christina Eunjin (3); Zhang, Xiaodong (4); Maritorena, Stephane (5); Bernard, Stewart (6); Loisel, Hubert (7); Jorge, Daniel S.F. (7); Kochetkova, Ekaterina (8); Roy, Shovonlal (9); Jonsson, Bror (3); Martinez-Vicente, Victor (3); Sathyendranath, Shubha (3)	1: California State University San Marcos, United States of America; 2: Earth Observation, CSIR; 3: Plymouth Marine Laboratory, UK; 4: The University of Southern Mississippi; 5: University of California at Santa Barbara; 6: SANSa; 7: Université du Littoral Côte d'Opale; 8: University of Pennsylvania; 9: University of Reading
17:30-17:45	09:30-09:45 (-8)	111	Ocean Colour Algorithms to Estimate the Concentration of Particulate Organic Carbon in Surface Waters of the Global Ocean from Multiple Satellite Missions	Stramski, Dariusz (1); Joshi, Ishan (1); Reynolds, Rick A. (1); Robinson, Dale H. (2)	1: Scripps Institution of Oceanography, University of California San Diego, La Jolla, California 92093-0238, United States of America; 2: University of California Santa Cruz, affiliated with NOAA CoastWatch at NOAA Southwest Fisheries Science Center, Santa Cruz, California 95060, United States of America
17:45-18:30		Discussion	Particulate Organic Carbon	Session chairs, speakers, all attendees	

Poster session 3

Time (GMT)	Local time (+/- GMT)	ID Theme	Title	Author(s)	Affiliation
13:20-14:20	19:20-20:20 (+6)	100 PP	Spatial and Temporal Distribution of Chlorophyll-a in Relation to Environmental Factors in the Bay of Bengal: A Remote Sensing Approach	Shuva, Md. Shahin Hossain	Department of Oceanography, University of Chittagong, Chittagong-4331, Bangladesh, People's Republic of
13:20-14:20	13:20-14:20 (+0)	101 PP	Primary Production, an Index of Climate Change in the Ocean: Satellite-Based Estimates over Two Decades	Kulk, Gemma (1); Platt, Trevor (1); Dingle, James (1); Jackson, Thomas (1); Jönsson, Bror F. (1); Bouman, Heather A. (2); Babin, Marcel (3); Brewin, Robert J. W. (4); Doblin, Martina (5); Estrada, Marta (6); Figueiras, Francisco G. (7); Furuya, Ken (8); González-Benítez, Natalia (9); Gudfinnsson, Hafsteinn G. (10); Gudmundsson, Kristinn (10); Huang, Bangqin (11); Isada, Tomonori (12); Kovač, Žarko (13); Lutz, Vivian A. (14); Marañón, Emilio (15); Raman, Mini (16); Richardson, Katherine (17); Rozema, Patrick D. (18); van de Poll, Willem H. (18); Segura, Valeria (14); Tilstone, Gavin H. (1); Uitz, Julia (19); van Dongen-Vogels, Virginie (20); Yoshikawa, Takashi (8); Sathyendranath, Shubha (21)	1: Plymouth Marine Laboratory, United Kingdom; 2: University of Oxford, United Kingdom; 3: Laboratoire d'Océanographie de Villefranche, France; 4: University of Exeter, United Kingdom; 5: University of Technology Sydney, Australia; 6: Institut de Ciències der Mar CSIC, Spain; 7: Instituto de Investigaciones Marinas CSIC, Spain; 8: University of Tokyo, Japan; 9: Universidad Rey Juan Carlos, Spain; 10: Marine and Freshwater Research Institute, Iceland; 11: Xiamen University, China; 12: Hokkaido University, Japan; 13: University of Split, Croatia; 14: Instituto Nacional de Investigacion y Desarrollo Pesquero, Argentina; 15: Universidade de Vigo, Spain; 16: Space Application Center ISRO, India; 17: University of Copenhagen, Denmark; 18: University of Groningen, The Netherlands; 19: Centre national de la recherche scientifique, France; 20: Australian Institute of Marine Science, Australia; 21: National Centre for Earth Observation, Plymouth Marine Laboratory, United Kingdom

13:20-14:20	13:20-14:20 (+0)	104 IC	Near-Surface Stratification Due To Ice Melt Biases Arctic Air-Sea CO2 Flux Estimates	Dong, Yuanxu (1,2); Yang, Mingxi (2); Bakker, Dorothee C. E. (1); Liss, Peter S. (1); Kitidis, Vassilis (2); Brown, Ian (2); Chierici, Melissa (3,4); Fransson, Agneta (5); Bell, Thomas G. (2)	1: Centre for Ocean and Atmospheric Sciences, School of Environmental Sciences, University of East Anglia, Norwich, UK; 2: Plymouth Marine Laboratory, Plymouth, UK; 3: Fram Centre, Institute of Marine Research, Tromsø, Norway; 4: Department of Arctic Geophysics, University Centre in Svalbard, Longyearbyen, Norway; 5: Fram Centre, Norwegian Polar Institute, Tromsø, Norway
13:20-14:20	14:20-15:20 (+1)	116 IC	Spectral Variations Of The Remote Sensing Reflectance During Coccolithophore Blooms In The Western Black Sea	Cazzaniga, Ilaria; Zibordi, Giuseppe; Mélin, Frédéric	EUROPEAN COMMISSION - JOINT RESEARCH CENTRE, Italy
13:20-14:20	14:20-15:20 (+1)	125 PP	Island Trapped Waves as a Driver of Primary Production at Lastovo Island (Adriatic Sea)?	Ljubešić, Zrinka (1); Kovač, Žarko (2); Orlić, Mirko (1); Mihanović, Hrvoje (3); Lučić, Davor (4); Čižmek, Hrvoje (5); Čolić, Barbara (5); Viličić, Damir (1)	1: University of Zagreb Faculty of Science, Croatia; 2: Faculty of Science Split, Croatia; 3: Institute of Oceanography and Fisheries, Split, Croatia; 4: University of Dubrovnik, Institute for Marine and Coastal Research, Dubrovnik, Croatia; 5: Marine Explorers Society 20000 Leagues, Zadar, Croatia
13:20-14:20	14:20-15:20 (+1)	126 POC	Bridging The Gaps Between Particulate Backscattering Measurements And Modelled Particulate Organic Carbon In The Ocean	Galí, Martí (1,2); Bernardello, Raffaele (2); Claustre, Hervé (3); Aumont, Olivier (4); Falls, Marcus (2)	1: Institut de Ciències del Mar, CSIC, Catalonia, Spain; 2: Barcelona Supercomputing Center; 3: CNRS and Sorbonne Université, Laboratoire d'Océanographie de Villefranche, France; 4: Sorbonne Université (CNRS/IRD/MNHN), LOCEAN-IPSL, Paris, France
13:20-14:20	13:45-14:45 (+0)	127 IC	Variabilité Spatiale et Saisonnière de la Profondeur de la Couche Mixte Dans l'Atlantique Tropical à L'aide de 40 Ans de Données D'observation	Kouamé, Kanga Désiré (1,2); Kouassi, Marcel (1); Trokourey, Albert (2); Toualy, Elisée (3); N'guessan, Kouadio Benjamin (1,2); Brehmer, Patrice (4); Ostrowski, Marek (5)	1: Centre de Recherches Océanologiques, Côte d'Ivoire; 2: Université Felix Houphouët-Boigny, Laboratoire de Chimie Physique, Abidjan, Côte d'Ivoire; 3: Université Felix Houphouët-Boigny, Laboratoire de Physique de l'Atmosphère et de Mécanique des Fluides (LAPA-MF), UFR SSMT, Abidjan, Côte d'Ivoire; 4: IRD, Univ Brest, CNRS, Ifremer, Plouzané, France; 5: Institute of Marine Research (IMR), Bergen, Norway
13:20-14:20	13:20-14:20 (+0)	141 PP	Variability in the Photosynthesis-Irradiance Parameters of Marine	Bouman, Heather A. (1); Sathyendranath, Shubha (2); Kulk, Gemma (2);	1: Department of Earth Sciences, University of Oxford, United Kingdom; 2: Plymouth Marine Laboratory, United Kingdom; 3: Faculty of

			Phytoplankton in Space and Time	Phongphattarawat, Sornsiri (1,3)	Technology and Environment, Prince of Songkla University, Phuket, Thailand
13:20-14:20	19:20-20:20 (+6)	163 BC	Blue Carbon Of Sea Grasses: A Cost Effective Climate Solution	Dias Dahanayake, Harsha; Perera, Thisaru; Suwandhahannadi, Wathsala; Wickramasinghe, Deepthi	University of Colombo, Sri Lanka
13:20-14:20	14:20-15:20 (+1)	175 PC	Two-decadal (2002-2020) Consistent Observation of Phytoplankton Functional Groups from Multi-sensor Ocean Colour Satellite Products – Toward Taxonomy-based Phytoplankton Carbon Derivation	Xi, Hongyan (1); Losa, Svetlana N. (1,2); Mangin, Antoine (3); Bretagnon, Marine (3); Peeken, Ilka (1); Bracher, Astrid (1,4)	1: Alfred Wegener Institute, Helmholtz-Centre for Polar and Marine Research, Germany; 2: Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russia; 3: ACRI-ST, Sophia Antipolis Cedex, France; 4: Institute of Environmental Physics, University of Bremen, Bremen, Germany
13:20-14:20	13:20-14:20 (+0)	186 PP	Novel Fluorescence Induction Protocols For Cyanobacteria Detection In Natural Samples	Courtecuisse, Emilie (1); Hunter, Peter (2); Oxborough, Kevin (3); Tilstone, Gavin (1); Spyrakos, Evangelos (2); Simis, Stefan (1)	1: Plymouth Marine Laboratory, United Kingdom; 2: University of Stirling, Scotland, United Kingdom; 3: Chelsea Technologies Ltd, United Kingdom
13:20-14:20	13:20-14:20 (+0)	189 PC	An Unconventional Investigation into the Seasonal Dynamics of Phytoplankton in the Nearshore	McCluskey, Elliot; Brewin, Bob	University of Exeter, United Kingdom
13:20-14:20	14:20-15:20 (+1)	197 DOC	COLOR: CDOM-proxy Retrieval From aeOLus ObseRvations	Dionisi, Davide (1); Bucci, Simone (2); Cesarini, Claudia (1); Colella, Simone (1); D'Alimonte, Davide (3); Di Ciolo, Lorenzo (2); Di Girolamo, Paolo (4); Di Paolantonio, Marco (1); Franco, Noemi (4); Gostinicchi, Giacomo (2); Kajiyama, Tamito (3); Liberti, Gian Luigi (1); Organelli, Emanuele (1); Santoleri, Rosalia (1)	1: Institute of Marine Sciences - National Research Council of Italy, Italy; 2: Serco Italia S.p.A.; 3: AEQUORA; 4: School of Engineering, University of Basilicata

13:20-14:20	14:20-15:20 (+1)	170 PP	Impacts Of Pyrogenic Aerosols On Plankton Ecosystems	Llort, Joan	Barcelona Supercomputing Centre, Spain
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Day 4

Session 4.1 - Phytoplankton and Primary Production

Chairs: Gemma Kulk, Katherine Richardson, Cecile Rousseaux

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
08:00-08:05		Session introduction	Phytoplankton and Primary Production	Session chairs	
08:05-08:35	09:05-09:35 (+1)	Keynote 4 (103)	Fragility of Primary Production	Kovac, Zarko (1); Sathyendranath, Shubha (2)	1: Faculty of Science, University of Split, Croatia, Croatia; 2: National Centre for Earth Observations, Plymouth Marine Laboratory, Prospect Place, The Hoe, Plymouth PL1 3DH, UK
08:35-08:50	17:35-17:50 (+9)	123	Remote Estimation Of Phytoplankton Primary Production In Clear To Turbid Waters By Incorporating A Semi-Analytical Model With A Machine-Learning Algorithm	Li, Zhaoxin (1); Yang, Wei (2); Matsushita, Bunkei (3); Kondoh, Akihiko (2)	1: Graduate School of Science and Engineering, Chiba University, Chiba 263-8522, Japan; 2: Center for Environmental Remote Sensing, Chiba University, Chiba 263-8522, Japan; 3: Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Ibaraki 305-8572, Japan
08:50-09:05		Break			
09:05-09:20	10:05-10:20 (+1)	190	An Allometric Model to Estimate Marine Net Primary Productivity from Space	González Taboada, Fernando	AZTI, Basque Research & Technology Alliance (BRTA), Spain
09:20-09:35	10:20-10:35 (+1)	174	Toward the Synergistic Use of Ocean Colour Products to Improve the Description of Phytoplankton Productivity within the Global Ocean	Bracher, Astrid (1,2); Xi, Hongyan (1); Alvarado, Leonardo (1,2); Nerger, Lars (1); Soppa, Mariana (1); Oelker, Julia (1,2); Losa, Svetlana (1); Gege, Peter (3); Brito, Ana C. (4); Brotas, Vanda (4); Costa,	1: Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research, Germany; 2: Institute of Environmental Physics, University of Bremen, Bremen, Germany; 3: German Aerospace Center (DLR), Remote Sensing Technology Institute, Oberpfaffenhofen, Germany; 4: MARE, Faculdade de Ciências, Universidade de Lisboa, Lisbon, Portugal;

				Maycira (5); Favareto, Luciane (4); Gomes, Mara (4); Perumthuruthil Suseelan, Vishnu (5); Richter, Andreas (2); Voelker, Christoph (1)	5: Department of Geography, University of Victoria, Victoria, BC, Canada
09:35-09:50	09:35-09:50 (+0)	144	Derivation of Seawater pCO ₂ Using Satellite Net Community Production Identifies the South Atlantic Ocean As a CO ₂ source	Ford, Daniel J. (1,2); Tilstone, Gavin H. (1); Shutler, Jamie D. (2); Kitidis, Vassilis (1)	1: Plymouth Marine Laboratory, Plymouth, UK; 2: College of Life and Environmental Sciences, University of Exeter, Penryn, UK

Session 4.2 - Phytoplankton and Primary Production

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
14:00-14:15	15:00-15:15 (+1)	124	Estimating Global PP From Space In Relation To Nutricline Depth In The Open Ocean	Richardson, Katherine (1); Bendtsen, Jørgen (2)	1: University of Copenhagen, Denmark; 2: ClimateLab, Denmark
14:15-14:30	15:15-15:30 (+1)	166	Investigating The Co-occurrence Of Chlorophyll-a And Primary Production Deep Maxima In The Oligotrophic Eastern Mediterranean	Livanou, Eleni (1); Psarra, Stella (1); Kulk, Gemma (2); Banks, Andrew Clive (1); Varkitzi, Ioanna (3); Lagaria, Anna (1); Assimakopoulou, Georgia (3); Raitzos, Dionysios E. (4); Sathyendranath, Shubha (2,5)	1: Institute of Oceanography, Hellenic Centre for Marine Research, P.O. Box 2214, 71003, Heraklion, Greece; 2: Earth Observation Science and Applications, Plymouth Marine Laboratory, Prospect Place, Plymouth PL1 3DH, United Kingdom; 3: Institute of Oceanography, Hellenic Centre for Marine Research, 46.7 km Athens-Sounio Avenue, 19013 Anavyssos, Greece; 4: Department of Biology, National and Kapodistrian University of Athens, 157 72 Athens, Greece; 5: National Centre for Earth Observation, Plymouth Marine Laboratory, Prospect Place, Plymouth PL1 3DH, United Kingdom
14:30-14:45	09:30-09:45 (-5)	128	Estimates of primary productivity using Geostationary Ocean Colour Imager (GOCI) data	Wu, Jinghui (1); Goes, Joaquim (1); Gomes, Helga (1); Lee, Zhongping (2); Noh, Jae-Hoon (3); Wei, Jianwei (4); Salisbury,	1: Lamont Doherty Earth Observatory at Columbia University, NY, USA; 2: University of Massachusetts, Boston, MA, USA; 3: Korean Institute of Ocean Science and Technology (KIOST), South Korea; 4: NOAA/NESDIS Center

				Joseph (5); Mannino, Antonio (6); Kim, Won-Kook (7); Park, Young-Je (3); Ondrusek, Michael (4); Lance, Veronica (4); Wang, Menghua (4); Frouin, Robert (8)	for Satellite Applications and Research, College Park, MD, USA; 5: University of New Hampshire, Durham, NH, USA; 6: Goddard Space Flight Centre, Maryland, USA; 7: Pusan National University, Busan, South Korea; 8: Scripps Institute of Oceanography, UCSD, CA, USA
14:45-15:00	09:45-10:00 (-5)	110	Parameters for the Depth of the Ocean's Productive Layer	Marra, John F. (1); Chamberlin, W. Sean (2); Knudson, Carol A. (3); Rhea, W. Joseph (4)	1: Brooklyn College of the City University of New York; 2: Fullerton College; 3: Lamont-Doherty Earth Observatory of Columbia University; 4: Naval Research Laboratory
15:00-15:45		Discussion	Phytoplankton and Primary Production	Session chairs, speakers, all attendees	
15:45-16:00		Break			
16:00-17:00	08:00-18:00 (-8, -6, -5, +0, +1)	Poster session 4			

Poster session 4

Time (GMT)	Local time (+/- GMT)	ID Theme	Title	Author(s)	Affiliation
16:00-17:00	08:00-09:00 (-8)	120 POC	Assessing Satellite Inter-Mission Consistency in the Retrieval of Particulate Organic Carbon Concentration in Ocean Surface Waters from Ocean Colour Observations	Joshi, Ishan (1); Stramski, Dariusz (1); Reynolds, Rick A. (1); Robinson, Dale H. (2)	1: Scripps Institution of Oceanography, University of California San Diego, La Jolla, California 92093-0238, United States of America; 2: University of California Santa Cruz, affiliated with NOAA CoastWatch at NOAA Southwest Fisheries Science Center, Santa Cruz, California 95060, United States of America
16:00-17:00	08:00-09:00 (-8)	121 POC	Partitioning the Export of Distinct Biogenic Carbon Pools in the Northeast Pacific Ocean Using a Biogeochemical Profiling Float	Huang, Yibin (1,2); Fassbender, Andrea (1,2,3); Long, Jacquelin (3); Johannessen, Sophia (4); Bif, Mariana (3)	1: Department of Ocean Sciences, University of California, Santa Cruz, CA, USA; 2: NOAA/OAR Pacific Marine Environmental Laboratory, Seattle, WA, USA; 3: Monterey Bay Aquarium Research Institute, Moss Landing, CA, USA; 4: Institute of Ocean Sciences, Sidney, British Columbia, Canada
16:00-17:00	17:00-18:00 (+1)	151 IC	Influence of Calcifying Phytoplankton Blooms on Carbon Transfer in the Mesopelagic Ocean	Neukermans, Griet (1); Briggs, Nathan (2); Terrats, Louis (3); Claustre, Hervé (3)	1: UGent, Belgium; 2: NOC, UK; 3: LOV, France
16:00-17:00	08:00-09:00 (-8)	153 IC	Spatial variation of DIC derived from Satellite Data in the California Current System During Spring (2003-2021)	Coronado-Alvarez, Luz de Lourdes Aurora (1); Addey, Charles (2); Hernández-Ayón, José Martín (1)	1: Instituto de Investigaciones Oceanológicas, Universidad Autónoma de Baja California, Ensenada, Mexico, Mexico; 2: Department of Marine Science, Ocean College, Zhejiang University, Zhoushan, China
16:00-17:00	11:00-12:00 (-5)	156 PC	Identifying Existing Gaps In The Detection Of Phytoplankton Community Composition From Space	Neeley, Aimee R. (1,2); Cetinić, Ivona (1,3); Werdell, Jeremy (1); McKinna, Lachlan (4)	1: NASA Goddard Space Flight Center, United States of America; 2: Science Systems and Applications, Inc, United States of America; 3: Morgan State University, United States of America; 4: Go2Q Pty Ltd, Australia
16:00-17:00	17:00-18:00 (+0)	167 PP	Threshold Indicators of Primary Production in the North-east Atlantic for Assessing Environmental Disturbances Using 21 Years	Tilstone, Gavin (1); Land, Peter (1); Pardo, Silvia (1); Kerimoglu, Onur (2); van der Zande, Dmitry (3)	1: Plymouth Marine Laboratory, United Kingdom; 2: Institute for Chemistry and Biology of the Marine Environment, University of Oldenburg; 3: Royal Belgian Institute of Natural Sciences, 29 Rue Vautierstraat, 1000 Brussels, Belgium.

			of Satellite Ocean Colour Data and Trends in Climatology, Phenology, Latitude and Annual Rates.		
16:00-17:00	08:00-09:00 (-8)	168 PP	Estimating Underwater Planar And Scalar Solar Fluxes In The Ultraviolet To The Visible From EPIC/DSCOVER Observations	Frouin, Robert (1); Tan, Jing (1); Boss, Emmanuel (2)	1: Scripps Institution of Oceanography, United States of America; 2: University of Maine, United States of America
16:00-17:00	11:00-12:00 (-5)	177 PP	Satellite-Based Estimation of Phytoplankton Size Class-Specific Variations in Primary Productivity in the River-Influenced Northern Gulf of Mexico	Lohrenz, Steven (1); Chakraborty, Sumit (2); Gundersen, Kjell (3)	1: School for Marine Science and Technology, University of Massachusetts Dartmouth, New Bedford, MA, U.S.A.; 2: Mote Marine Laboratory, Sarasota, FL, U.S.A.; 3: Institute of Marine Research, Bergen, Norway
16:00-17:00	08:00-09:00 (-8)	179 BC	Detection and Characterization of Coastal Tidal Wetland Change on the U.S. Atlantic Coast	Yang, Xiucheng (1); Zhu, Zhe (1); Kroeger, Kevin D. (2); Zhu, Zhiliang (3); Covington, Scott (4)	1: Department of Natural Resources and the Environment, University of Connecticut; 2: U.S. Geological Survey, Woods Hole Coastal & Marine Science Center; 3: U.S. Geological Survey; 4: U.S. Fish and Wildlife Service
16:00-17:00	17:00-18:00 (+1)	181 DOC	Using Sentinel 3 OLCI to monitor dissolved organic carbon in the Lena River	El Kassar, Jan (1); Juhls, Bennet (2); Overduin, Paul (2); Hieronymi, Martin (3)	1: Freie Universität Berlin, Berlin, Germany; 2: Alfred Wegener Institut, Potsdam, Germany; 3: Helmholtz-Zentrum hereon GmbH, Geesthacht, Germany
16:00-17:00	10:00-11:00 (-6)	185 PP	Space-Time Variation of Satellite Chlorophyll in the Gulf of California	Coronado-Alvarez, Lourdes (2); Delgado-Contreras, Juan Antonio (1); Cisneros-Mata, Miguel Angel (3); Cruz-Colín, María Esther (3); Hernández-Ayón, José Martín (2)	1: Tecnológico Nacional de México, Guaymas, México; 2: Universidad Autónoma de Baja California, México; 3: Instituto Nacional de Pesca y Acuacultura, Guaymas, México

Day 5

Session 5.1 - Crosscutting themes: Extreme Events

Chairs: Thomas Frölicher, Fang Shen

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
12:30-12:35		Session introduction	Extreme Events	Session chairs	
12:35-12:50	13:35-13:50 (+1)	172	Widespread And Unprecedented Phytoplankton Blooms Triggered By 2019–2020 Australian Wildfires	Llort, Joan (1,3); Tang, Weiyi (2,11); Weis, Jakob (3,4); Perron, Morgane (3); Basart, Sara (1); Li, Zuchan (2,5); Sahtyendranath, Shubha (6); Jackson, Thomas (6); Sanz Rodriguez, Estrella (7); Proemse, Bernadette (1); Bowie, Andrew (3,8); Schallenberg, Christina (3,8); Strutton, Peter (3,4); Matear, Richard (9); Cassar, Nicolas (10)	1: Barcelona Supercomputing Centre, Spain; 2: Division of Earth and Climate Sciences, Nicholas School of the Environment, Duke University, Durham, NC, USA; 3: Institute for Marine and Antarctic Studies, University of Tasmania, Hobart, Tasmania, Australia; 4: Australian Research Council Centre of Excellence for Climate Extremes, University of Tasmania, Hobart, Tasmania, Australia; 5: Applied Ocean Physics and Engineering, Woods Hole Oceanographic Institution, Woods Hole, MA, USA; 6: Plymouth Marine Laboratory, Plymouth, UK; 7: Australian Centre for Research on Separation Science (ACROSS), School of Natural Sciences, University of Tasmania, Hobart, Tasmania, Australia; 8: Australian Antarctic Program Partnership, University of Tasmania, Hobart, Tasmania, Australia; 9: CSIRO Oceans and Atmosphere, Hobart, Tasmania, Australia; 10: CNRS, Univ Brest, IRD, Ifremer, LEMAR, Plouzané, France; 11: Department of Geosciences, Princeton University, Princeton, NJ, USA.
12:50-13:05	13:50-14:05 (+1)	109	Compound Marine Heatwaves and Ocean Acidity Extremes over the Satellite Period	Frölicher, Thomas (1,2); Burger, Friedrich (1,2); Terhaar, Jens (1,2)	1: Climate and Environmental Physics, University of Bern, Switzerland; 2: Oeschger Centre for Climate Change Research

13:05-13:20	08:05-08:20 (-5)	154	Impact of Pacific Ocean heatwaves on phytoplankton community composition	Arteaga, Lionel A. (1,2); Rousseaux, Cecile S. (1,2)	1: NASA GSFC, United States of America; 2: UMBC, United States of America
13:20-13:35	07:20-07:35 (-6)	160	Extreme Events and the Carbon Cycle in the Coastal Ocean From Ocean Colour Remote Sensing: Case Studies	D'Sa, Eurico J. (1); Tzortziou, Maria (2); Liu, Bingqing (3)	1: Louisiana State University, USA; 2: The City University of New York, USA; 3: The Water Institute of the Gulf, USA
13:35-13:55		Discussion	Extreme Events	Session chairs, speakers, all attendees	

Session 5.2 - Crosscutting themes: Blue Carbon, Carbon Budget Closure and Closing session

Blue Carbon chairs: Emily Pidgeon, Maria Tzortziou

Budget Closure/Closing session chair: Andrew Watson

Time (GMT)	Local time (+/- GMT)	ID	Title	Author(s)	Affiliation
15:00-15:05		Session introduction	Blue Carbon	BC Session chairs	
15:05-15:20	16:05-16:20 (+1)	169	Mapping and Monitoring 'Blue Carbon' Ecosystems at Scale with Sentinel-2 Imagery	Huber, Silvia; Rasmussen, Mikkel Lydholm; Hansen, Lars Boye	DHI, Denmark
15:20-15:35	10:20-10:35 (-5)	139	Using Daily PlanetScope Imagery to Estimate Seagrass Density and Blue Carbon.	Hill, Victoria; Zimmerman, Richard; Li, Jiang	Old Dominion University, United States of America
15:35-15:50	10:35-10:50 (-5)	150	Carbon Fixation and Sequestration by Pelagic Macroalgae: A Remote Sensing Perspective	Hu, Chuanmin (1); Lapointe, Brian (2); Qi, Lin (3); Wang, Menghua (4)	1: University of South Florida, United States of America; 2: Florida Atlantic University; 3: Global Science and Technology, Inc.; 4: NOAA/NESDIS/STAR
15:50-16:05	07:50-08:05 (-8)	Invited talk	The Blue Carbon Initiative	Pidgeon, Emily (1)	1: Conservation International
16:05-16:25		Discussion	Blue Carbon	Session chairs, speakers, all attendees	
16:25-16:40		Break			
16:40-16:45		Session introduction	Closing session	Closing session chair	

16:45-17:05	16:45-17:05 (+0)	Keynote 5 (178)	A Budget for Biological Pools and Fluxes of Carbon in the Oceanic Mixed Layer	Sathyendranath, Shubha (1); Kulk, Gemma (1); Brewin, Robert (2); Jönsson, Bror (1); Kong, Christina (1); Laine, Marko (3); Jackson, Thomas (1); Dingle, James (1); Bouman, Heather (4); Raitsos, Dionysios (5); Psarra, Stella (6); Liivanou, Eleni (6); Ramon, Didier (7); Steinmetz, François (7); Dall'Olmo, Giorgio (1); Kostadinov, Tihomir (8); Rousseaux, Cécile (9); Shutler, Jamie (2); Richardson, Katherine (10); Salisbury, Joe (11); Fellows, Mick (12); Watson, Andrew (2); Platt, Trevor (1)	1: Plymouth Marine Laboratory, United Kingdom; 2: University of Exeter, United Kingdom; 3: Finnish Meteorological Institute, Finland; 4: Oxford University, United Kingdom; 5: University of Athens, Greece; 6: HCMR, Greece; 7: HYGEOS, France; 8: California State University San Marcos, USA; 9: NASA, USA; 10: University of Copenhagen, Denmark; 11: University of New Hampshire, USA; 12: MIT, USA
17:05-17:25	09:05-09:25 (-8)	Keynote 6 (184)	Quantifying the Carbon Export and Sequestration Pathways of the Ocean's Biological Carbon Pump	Nowicki, Michael (1,2,3); DeVries, Tim (1,2,3); Siegel, David (1,2,3)	1: University of California, Santa Barbara, United States of America; 2: Department of Geography; 3: Earth Research Institute
17:25-18:15		Final Discussion	Closing session	Session panellists (session chairs + keynote speakers) and all attendees	