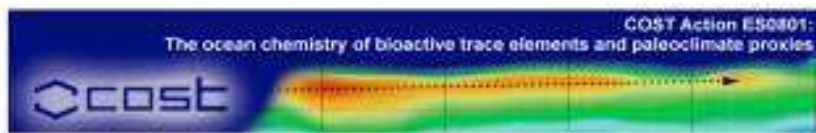


# TRACES & TRACERS



**Liège, Belgium**  
**2<sup>nd</sup> – 6<sup>th</sup> May 2011**

***Tracers of physical and biogeochemical processes,  
past changes and ongoing anthropogenic impacts***



**43rd Liège Colloquium on Ocean Dynamics: *Tracers of physical and biogeochemical processes, past changes and ongoing anthropogenic impacts* - 2 to 6 May 2011**

Meeting Place: "Petits Amphis" - B7b - 202

**Program**

	<b>Monday (02/05)</b>	<b>Tuesday (03/05)</b>		<b>Wednesday (04/05)</b>	<b>Thursday (05/05)</b>	<b>Friday (06/05)</b>
08:30	Registration					
09:00		Chair: <u>H. de Baar</u>		Keynote by Javier Aristegui	Keynote by Bob Anderson	Chair: <u>R. Wanninkhof</u>
09:30	Opening of the colloquium	IPY				Gas exchanges
09:50	Keynote by Hein de Baar	Insights from the International Polar Year		Chair: <u>J. Aristegui</u>	Chair: <u>C. Jeandel</u>	
10:10	Chair: <u>F. Dehairs</u>					Chair: <u>F. Primeau</u>
10:30						
10:50		Chair: <u>M. Uematsu</u>	<b>BONUS -Goodhope Project Parallel Meeting</b>	IMBER	Chair: <u>F. Lacan</u>	Tracers to investigate large scale circulation and ventilation
11:10	BONUS-Goodhope			Tracing physical and biogeochemical processes at coastal and ocean interface	Trace element cycling distribution and impact on the biota	
11:30	Special session devoted to the BONUS-Goodhope project	Tracing anthropogenic impact				
11:50						
12:10						
12:30						
14:00	Chair: <u>S. Speich</u>		Place: Petits Amphis B7b - A3	Keynote by Ken Buesseler	Chair: <u>B. Anderson</u>	Chair: <u>R. François</u>
14:20						
14:40		Chair: <u>R. Sanders</u>				
15:00						
15:20	Chair: <u>M. R. van der Loeff</u>		Chair: <u>S. Speich</u>		Social event Visit of the "Grand Crurtius"	
15:40						
16:00	IPY	Modeling of TEI and tracers				
16:20	Insights from the International Polar Year					
16:40						end at 16:00
17:00		Poster session				
17:20		Cheese and wine reception				
17:40						
18:00	Ice Breaker party			Colloquium dinner		

## Monday

08:30 - 9:20	Registration	
09:20 - 9:30	Opening of the colloquium by Bruno Delille and Marilaure Grégoire	
09:30 - 10:00	Keynote by Hein de Baar	Southern Ocean Iron Fertilization; What do we know now, what needs to be investigated
<b>Session 1 – BONUS - Goodhope</b>		
<b>Session 1.1 – BONUS - Goodhope – Chair: F. Dehairs</b>		
10:00 -10:10	Speich S.	Bonus Session Introduction
10:10 -10:30	Arhan M., S. Speich	Southward transport of subtropical and alongshore properties by eddies south of Africa
10:30 -10:50	Rodgers, K.B., Aumont, O., Bopp, L., Ludicone, D.	Storminess controls on Southern Ocean Ecosystems and Biogeochemistry
<b>11:10 -11:30</b>	<b>Coffee</b>	
11:30 - 11:50	Gonzalez-Davila M., Santana-Casiano R.A., Fine J., Happell B., Delille B. and Speich S.	Carbonate system buffering in the water masses of the Southwest Atlantic sector of the Southern Ocean during February-March 2008
11:50 - 12:10	Tisnérat-Laborde N., B. Delille, M. Gonzalez-Davila, J. M. Santana-Casiano, L. Bordier, C. Hatté, C. Moreau, M. Paterne, M. Boyé, S. Speich	Evolution of dissolved inorganic radiocarbon in the eastern Atlantic sector of the Southern Ocean
12:10 - 12:30	Cavagna Anne-Julie, Frank Dehairs, Véronique Woule-Ebongué, Bruno Delille	Surface $\delta^{13}\text{C}$ -POC, cholesterol and brassicasterol decline from Cape Basin to the northern Weddell Gyre (Southern Ocean): is the signal conserved in the deep ocean?
<b>12:30 - 14:00</b>	<b>Break</b>	
<b>Session 1.2 – BONUS - Goodhope – Chair: S. Speich</b>		
14:00 - 14:20	Coffineau N., C.L. De La Rocha, P. Bescont, A. Croguennoc, E. Ponzevera	Behavior of Silicon Isotopes ( $\delta^{30}\text{Si}$ ) of dissolved Si in the Atlantic and Indian Sectors of the Southern Ocean
14:20 - 14:40	Dehairs F., S. Jacquet, F. Fripiat, D. Cardinal, M. Hoppema, C. Jeandel, C.	Differential retention of dissolved barium and silicon in the
14:40 - 15:00	Lacan F., Radic A. and Labatut M.	Iron isotopes in the ocean: new constrains on the Fe oceanic cycle
15:00 - 15:20	Sarthou G, Bucciarelli E, Chever F, Speich S, Planchon F, Hansard Paul, Santana-Casiano M, Gonzalez-Davila M	Labile Fe(II) concentrations in the Atlantic sector of the Southern Ocean along a transect from the subtropical domain to the Weddell Sea Gyre

## Monday

### Session 2 – IPY : Insights from the International Polar Year

#### Session 2.2 – IPY : Insights from the International Polar Year – Chair: M. Rutgers van der Loeff

15:20 - 15:40	Rutgers van der Loeff M., P Cai, D Bauch, T Roeske, M Klunder, R Middag, K	Tracers of river inputs in the Transpolar Drift, Arctic Ocean during the
<b>15:40 - 16:00</b>	<b>Coffee</b>	
16:00 - 16:20	Bousserez E., H. Thomas, P. van Beek	Cross-shelf exchange in the Beaufort Sea
16:20 - 16:40	Matthew A., Charrette M.A. and P. Van Beek	The Role of Ocean Mixing in Southern Ocean Iron-fueled Phytoplankton Blooms: Insight from Radium Isotopes
16:40 - 17:00	Cámara-Mor P., P. Masqué, J. Garcia-Orellana, J.K. Cochran, J.L. Mas, E. Chamizo, C. Hanfland	Radionuclides as tools to study the role of the Arctic Sea Ice in the interception, transport and redistribution of particulate matter and chemical species
17:00 - 17:20	Thomas H, E Shadwick, F Dehairs, B Lansard, J Navez, Y Gratton, F Prowe, A Mucci, M Chierici, A Fransson, T N. Papakyriakou, E Sternberg and L A. Miller	Barium and Carbon fluxes in the Canadian Arctic Archipelago
17:20 - 17:40	de Baar H.J.W., R. Middag, P. Laan	Dissolved Aluminium and Manganese in the Arctic-Atlantic-Antarctic Oceans
17:40 - 18:00	Laan P., M.B. Klunder, D. Bauch, H.J.W. De Baar	IPY – GEOTRACES: Dissolved Fe in the Arctic Ocean
<b>18:00 - 20:30</b>	<b>Ice Breaker party</b>	

# Tuesday

## Session 2 – IPY : Insights from the International Polar Year

### Session 2.2 – IPY : Insights from the International Polar Year - Chair: H. de Baar

09:00 - 9:20	Schlosser Christian, Christina L. De La Rocha, Peter Streu, Peter L. Croot	Solubility of iron in the Southern Ocean
09:20 - 09:40	Francois R. and Soon M.	Changes in the deep water circulation of the Arctic Ocean during the last 30 years inferred from the distribution of <sup>230</sup> Th in the water column
09:40 - 10:00	Abouchami W., S.J.G. Galer, H. De Baar, A.C. Alderkamp, R. Middag, P. Laan, H. Feldmann, M.O. Andreae	The Southern Ocean Cadmium Isotope Divide
10:00 - 10:20	Pahnke K.	Seawater neodymium isotope ratios in the Pacific sector of the Southern Ocean
10:20 - 10:40	Heller M. I., P. L. Croot	The impact of Superoxide (O <sub>2</sub> <sup>-</sup> ) on trace metal redox cycles and the reactivity with dissolved organic matter

**10:40 - 11:00 Coffee**

## Session 3 – Tracing anthropogenic impact

### 1 Tracing

11:00 - 11:20	Wanninkhof R., G-H Park, T Takahashi, R A. Feely, J L. Bullister	Evidence of anthropogenic CO <sub>2</sub> in deep-water using discrete pCO <sub>2</sub> measurements
11:20 - 11:40	Racape V., Metz N., Pierre C.	Anthropogenic carbon changes in the North Atlantic Subpolar Gyre: what do we learn from δ <sup>13</sup> C?
11:40 - 12:00	Flecha S., Perez F.F., Navarro G., Ruiz J., Olive I. and I.E. Huertas	Anthropogenic carbon inventory in the Gulf of Cadiz
12:00 - 12:20	Tjiputra Jerry, Christoph Heinze	Oceanic transport of anthropogenic carbon in the changing climate

**12:00 - 14:00 Break**

14:00 - 14:20	Richir J., N. Luy, P. Serpe, L. Lefebvre, G. Lepoint, R. Biondo, S. Gobert	Combined utilization of DGTs and bioindicators to trace chemical contamination threats on coastal ecosystems
14:20 - 14:40	Demina L	Role estimation of the global biological filters in trace element geochemical migration in the ocean

## Session 4 – Modeling of TEI and Tracers

### Session 4.1 – Modeling of TEI and Tracers - Chair: R. Sanders

14:40 - 15:00	Van Hulst M.M.P., A. Sterl, A. Tagliabue, J.-C. Dutay, M. Gehlen, H.J.W. de Baar, R. Middag and W. Hazeleger	Aluminium in a general circulation model. Optimising the model or the measurements?
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**15:00 - 15:20 Coffee**

15:20 - 15:40	Radtke Hagen	Tracking the fate of nutrients from different sources in the Baltic Sea food web
15:40 - 16:00	Somes C, A Oschlies, A Schmittner	Constraining the oceanic fixed N budget using xsP and nitrogen isotopes tracers
16:00 - 16:20	Schmittner A., Somes C., Galbraith E., Kienast M., Mix A.	Using Isotopes to Reconstruct Glacial Nitrogen and Carbon
16:20 - 16:40	Masahito Shigemitsu, Takeshi Okunishi, Jun Nishioka, Hiroshi Sumata, Taketo Hashioka, Maki Noguchi Aita, S. Lan Smith, Naoki Yoshies, Yasuhiro Yamanaka	Development of a one-dimensional ecosystem model including iron cycle

**16:40 - 20:00 Poster session - Cheese and wine reception**



## Wednesday

### Session 5 – IMBER : Tracing physical and biogeochemical processes at coastal and ocean interface

#### Session 5.1 – IMBER - Chair: J. Aristegui

09:00 - 09:30	Keynote: Javier Aristegui	The IMBER program
09:30 - 09:50	Steinfeldt R., S. Rütten, J. Sültenfuß, M. Dengler, M. Rhein	Coastal upwelling off Mauritania inferred from helium isotope disequilibrium
09:50 - 10:10	Perianez R.	Radioisotopes and heavy metals as tracers of circulation in southern Iberian Peninsula coastal waters: a numerical modelling study
10:10 - 10:30	Dumas F, P Bailly du Bois, L Sollier, C Voiseux, R Le Gendre, P Laguionie	Artificial Radionuclides : unique tools to investigate the circulation at various scales over the North West European Shelf
<b>10:30 - 10:50</b>	<b>Coffee</b>	
10:50 - 11:10	Guo X., J. Zhang	Tracer transport modeling on Kuroshio subsurface water intrusion onto the shelf of East China Sea
11:10 - 11:30	Bouloubassi I, A Gogou, S Stavrakakis	Biomarkers as tracers of biogenic fluxes in the SW Black Sea
11:30 - 11:50	Gogou A., Mara P., Stavrakakis S., Krassakopoulou E. and Lykousis V.	Seasonal and depth-related variations of $\delta^{13}\text{C}_{\text{org}}$ and $\delta^{15}\text{N}$ in settling particles from the open Eastern Mediterranean Sea (NESTOR site)
11:50 - 12:10	Canuto V.	Mesoscale induced eddy velocities for passive and active tracers
12:10 - 12:30	Gaultier L., J. Verron, P. Brasseur, J.-M. Brankart	On the use of sub-mesoscale tracer information for the control of ocean circulations
<b>12:30 - 14:00</b>	<b>Break</b>	
14:00 - 14:30	Keynote: Ken Buesseler	Controls on and variability in particle export and flux attenuation in the ocean's twilight zone
14:30 - 14:50	Henson Stephanie, Richard Sanders	A reduced estimate of the strength of the ocean's biological carbon pump
14:50 - 15:10	Resplandy L., A. Martin, M. Lévy	Influence of thorium small-scale spatial variability on export estimates
15:10 - 15:30	Choumiline K., F. Aguirre-Bahena, E. Shumilin, N. Silverberg, D. Sapozhnikov	Settling particulate matter composition and element flux quantification in Alfonso Basin, La Paz Bay, Gulf of California: 2002-2008 sediment trap series
<b>15:30 - 15:50</b>	<b>Coffee</b>	
15:50 - 16:10	Chen Jianfang	Water column processes of particulate matter in the South China Sea and its significance for some paleo-proxies
16:10 - 16:30	Lockwood D., P. Quay, R. Feely	Determining the biological contribution to the high CO <sub>2</sub> drawdown in the North Pacific through continuous estimates of carbon export and air-sea CO <sub>2</sub> flux
16:30 - 16:50	McAlister J., K. Orians	Controls on hydroxide-speciated trace metals in the ocean
16:50 - 17:10	Santos-Echeandia J., Laglera L.M., Prego R., Sarthou G. and Dominguez B	Highly productive coastal systems as important sources of complexed
<b>20:00 - 23:00</b>	<b>Colloquium Dinner: "Château de Colonster"</b>	

# Thursday

## Session 6 – TEI : Trace element cycling distribution and impact on the biota

### Session 6.1 – TEI : Trace element cycling distribution and impact on the biota - Chair: C. Jeandel

09:00 - 09:30	Keynote: Bob Anderson	Trace elements in the ocean: getting at the source
09:30 - 09:50	Rijkenberg MJA, Gerringa, LJA, Laan, P, Schoemann, V, Middag, R, van Heuven, SMAC, Salt, L, van Aken, HM, de Jong, JTM, de Baar, HJW	Dissolved Fe in the Western Atlantic Ocean: distribution, sources, sinks and cycling
09:50 - 10:10	Labatut M., Radic A., Grenier M., Lacan F., Poitrasson F., Jeandel C.	Studying the Fe oceanic cycle in the western equatorial Pacific with Fe and Nd isotopes
10:10 - 10:30	Moos S.B., Pöhle S. and Koschinsky A.	Redox Speciation of Chromium in the Water Column of the Tropical Atlantic Ocean

### 10:30 - 10:50 Coffee

### Session 6.2 – TEI : Trace element cycling distribution and impact on the biota - Chair: F. Lacan

10:50 - 11:10	Kadko D.	Novel tracer applications of the cosmogenic isotope <sup>7</sup> Be
11:10 - 11:30	Boyle E., Echegoyen-Sanz Y., Kornace K., Lee J.-M., Gamo T., Obata H., Norisuye K.	Lead and Lead Isotopes in the Atlantic and Indian Ocean
11:30 : 11:50	Sarin M.M., Bikina Srinivas and Ashwini Kumar	Impact of Anthropogenic Sources on Aerosol Iron Solubility: Comparative Study from Tropical Bay of Bengal and Arabian Sea
11:50 - 12:10	Uematsu M.	Geographical distribution and chemical characterization of natural and anthropogenic substances in marine aerosols over the Pacific Ocean
12:10 - 12:30	Wuttig K., Heller M.I., Guieu C., Croot P.L.	Biogeochemistry and distribution of Mn in the surface ocean and the influences of Saharan dust deposition

### 12:30 - 13:30 Break

### Session 6.3 – TEI : Trace element cycling distribution and impact on the biota - Chair: B. Anderson

13:30 - 13:50	Jeandel C., Pradoux C., Zhang Y., Van Beek P. and Lacan F.	Land-to-ocean processes on and along the Kerguelen plateau traced by the REE concentrations and Nd isotopic composition
13:50 - 14:10	Jones M.T., Pearce C.R., Oelkers E.H., Pradoux C. and Jeandel C.	Oceanic element budgets: changing the paradigm
14:10 - 14:30	Marchandise S., Roy-Barman M., Robin E., Ayrault S., Colin C., Coppola L., Miquel J.-C. and Gasser B.	Composition and distribution of U-Th-REE rich phases in marine sediments
14:30 - 14:50	Prego R, Costas M and Bendicho C	Arsenic transport through a river-estuary-ria system with arsenopyrites in the fluvial basin

### 16:00 - 18:00 Social Event: visit of the "Grand Curtius"

# Friday

## Session 7 – Gas exchanges

### Session 7.1 – Gas exchanges – Chair: R. Wanninkhof

09:00 - 09:20	Ho D.T., Ullman D.S., Wanninkhof R., Hebert D., Edson J. and Fairall C.W.	Comparing gas transfer velocities measured with tracer mass balance and CO <sub>2</sub> eddy covariance
09:20 - 09:40	Kuss J., B. Schneider	Atlantic mercury emissions determined from measured elemental mercury sea-air disequilibrium
09:40 - 10:00	Dixneuf S., Ruth A.A., Nitschke U., Stengel D.B.	Molecular iodine emission rates of different thallus parts of <i>Laminaria digitata</i> determined using incoherent-broadband cavity-enhanced absorption spectroscopy

## Session 8 – Tracers to investigate large scale circulation and ventilation

### Session 8.1 – Tracers to investigate large scale circulation and ventilation – Chair: F. Primeau

10:00 - 10:20	Olsen A. and U. Ninnemann	Preindustrial North Atlantic d <sup>13</sup> C Distribution Reconstructed
<b>10:20 - 10:40</b>	<b>Coffee</b>	
10:40 - 11:00	Van Heuven S.M.A.C., Salt L., De Baar H.J.W. and Meijer H.A.J.	Initial results of <sup>14</sup> C in GEOTRACES-NL
11:00 - 11:20	Fagel N., N. Mattielli, C. Hillaire-Marcel	Holocene evolution of deep circulation in the northern North Atlantic constrained by sedimentary radiogenic tracers
11:20 - 11:40	N. Tisnérat-Laborde, M. Paterne, J.C. Dutay, M. Arnold, K. Rodgers, G. Reverdin.	Oceanic circulation changes in the Northeast Atlantic Ocean as documented by radiocarbon record over the last 40 years
11:40 - 12:00	Frank N., N Tisnérat-Laborde, J-C Monterro-Serano, E Douville, D Blamart, G Reverdin, M Dottori, K Copard, C Colin, V Thierry, B Guillaumont, P Montagna	North-East Atlantic water mass geochemical tracers during the past 60 years and beyond (Newton)
12:00 - 12:20	Tazoe H. Sato, H. Nagai, H. Obata, T. Gamo	Surface Nd isotopic distribution in the South Pacific Ocean and the Pacific sector of the Southern Ocean
12:20 - 12:40	Jeansson E., Olsen A. and Johannessen T.	Ventilation of intermediate and deep waters in the Nordic Seas

### **12:40 - 14:00** Break

### Session 8.2 – Tracers to investigate large scale circulation and ventilation – Chair: R. François

14:00 - 14:20	Croot P.L., O. Baars, K. Bluhm, A. Dammschaeuser, M.I. Heller, C. Schlosser, P. Streu, K. Wuttig	Transient redox species as tracers of oceanographic mixing and transport
14:20 - 14:40	Primeau F.	A tracer constrained inverse circulation model for estimating the ventilation rates of deep waters in the ocean

### **14:40 - 15:00** Coffee

15:00 - 15:20	Deleersnijder E., De Brye B., De Brauwere A., Gourgue O. and Delhez E.	A generic approach to the concept of water renewal: theory, idealised examples and realistic application to Lake Tanganyika and the Scheldt Estuary
15:20 - 15:40	Mouchet A., Menviel L., Goosse H., Loutre M.-F. and Timmermann A.	Impact of climate and carbon sensitivities on the North Pacific ventilation in an Earth system model
15:40 - 16:00	Tarakanov R.	Circulation of Abyssal and Deep Waters near the Hero and Shackleton Fracture Zones in the Drake Passage



## Session 9 – Posters

### BONUS

1	Bown J., M. Boye, A. Baker, E. Duvieibourg, F. Lacan, F. Le Moigne, F. Planchon, S. Speich, D.M. Nelson	The biogeochemical cycle of dissolved cobalt in the Atlantic and the Southern Ocean south off the coast of South Africa
2	Chever F., E. Bucciarelli, G. Sarthou, S. Speich, M. Arhan, P. Penven, A. Tagliabue	Physical speciation of iron in the Atlantic sector of the Southern Ocean along a transect from the subtropical domain to the Weddell Sea Gyre
3	B. Delille, N.-X. Geilfus, M., Gonzales-Davila, J.M. Santana-Casiano, F. Planchon, A.-J. Cavagna, D. Cardinal, F. Fripiat, L. André, S. Speich, and F. Dehairs	pCO <sub>2</sub> and dissolved inorganic carbon distribution of the mixed layer during the Bonus-Goodhope cruise.
4	Fripiat F., Cavagna A.J., Dehairs F., Speich S., André L. and Cardinal D.	Silicon pool dynamics and biogenic silica export in the Antarctic Circumpolar Current inferred from Si-isotopes.
5	Garcia-Solsona E., M. Labatut, F. Lacan, C. Pradoux, C. Jeandel	Dissolved and particulate REE patterns and Nd isotopes along the Bonus GoodHope section
6	Speich S., Arhan M. and Gladyshev S.	The Southern Ocean mixing layer south of Africa: Results from the IPY BONUS GoodHope transect, other GoodHope recent cruises and Argo data
7	Jacquet S., O. Grauby, A. Baronnet, D. Cardinal, S. Marchandise, F. Dehairs	Barite crystals facies in the Southern Ocean: towards a better understanding of bio-organo-mineralisation mechanisms

### IPY

8	Heller M. I., P. L. Croot	The impact of Superoxide (O <sub>2</sub> <sup>-</sup> ) on trace metal redox cycles and the reactivity with dissolved organic matter
9	Laan P., M.B. Klunder, H.J.W. De Baar	IPY – GEOTRACES: Dissolved Fe in the Southern Ocean
10	LI Hongliang, Jianfang CHEN, Haiyan JIN, Yong LU, Shengquan GAO, Haisheng ZHANG	Carbon and nitrogen isotopic compositions of particulate organic matter and biogeochemical processes in the western Arctic Ocean
11	Merkouriadi, M. Leppäranta	Heat Budget during the ice season in Hanko peninsula, Finland
12	Schoemann V. , De Jong J.T.M., Lannuzel D., Delille B., Chou L. , Becquevort S. , Tison J.L.	Fe isotopes : a tool to trace biological processes in Antarctic sea ice
13	Jin H-Y. Jin, J-F. Chen, H-L. Li, S-Q. Gao, Y. Lu, Y-P, Zhuang	Nutrients conditions controls on phytoplankton communities in Chukchi Sea during Aug. to Sep., 2008
14	Spolaor A., Vallelonga P., Gabrieli J., Gozzi G., Turetta C., Gambaro A., Barrante C.	Iron speciation in the Talos Dome ice core

### Trace element

15	Demina L.L., Holm N.G., Galkin S.V., Lein A.YU.	Trace elements in the deep-sea hydrothermal ecosystems: tracers of the biogeochemical processes
16	El Alami S., B.Zourarah	seasonal Follow-up of the heavy metal contents of an estuarine system Tahaddart: Moroccan Atlantic coast
17	Ospina-Alvarez N, Caetano M, Vale C, Santos-Echeandia J and Prego R	Interchange of dissolved trace metals across sediment -water interfaces in a ria-type ecosystem (Ria of Ortigueira, NW Spain)
18	Prego R, Santos-Echeandía J, Caetano M and Varela M	Dissolved and particulate trace metals in the Finisterre coastal waters. Is it a pristine environment?

<b>Session 9 – Posters</b>		
19	Rousseau T., Jeandel C., Sonke J.E., Boaventura G.R, Seyler P. and Souhaut M.	Nd isotopes in the western equatorial Atlantic water masses: Amazon river and margin contributions
<b>Tracing anthropogenic impact</b>		
20	Balachandran K.K. and Paimpillil J.S.	Ground Water Fluxes – An indication of anthropogenic impacts on coastal Mudbank generation
21	Demina L	Role estimation of the global biological filters in trace element geochemical migration in the ocean
22	Rahnavard M., B. Doustshenas, A. Savari, N. Sakhaee, A. Mahvari	Spatial and Temporal Distribution of Mollusks in North coast of Qeshm Island
23	Sarin M.M. and Bikina Srinivas	Atmospheric Deposition of Toxic Metals to Bay of Bengal: Implications to Ocean Surface Biogeochemistry
24	Trevisiol A., Bergamasco A., Montagna P., Sprovieri M. and Taviani M.	Geochemical investigation of the bivalve <i>Adamussium colbecki</i> : potential high-resolution proxy to reconstruct Antarctic water properties
<b>IMBER</b>		
25	Arkhipkin V.S., A.V. Polyakova, T.V. Polyakova	Tracers of ecosystem change in the Black Sea northeastern part
26	Canuto V.	Vertical diffusivities for passive and active tracers
27	Dussauze M., A. Menesguen, F. Dumas	Use of passive and active tracers in a biogeochemical-3D model to assess the role of river inputs on the Bay of Biscay, English Channel and southern North Sea
28	Periañez Raul, Juan P. Bolivar, Melquiades Casas	Towards the development of a numerical transport model for tracer dispersion in the Bay of Cadiz (southwest Spain)
29	Periañez R., Hierro A., Bolivar J.P. and Vaca F.	The geochemical behaviour of trace elements in coastal waters: a modelling study for the Huelva estuary
30	Roy-Barman M., Thil F., Sicre M.-A., Miquel J.-C. and Coppola L.	Determination of sediment traps efficiency with <sup>230</sup> Thxs in the Mediterranean Sea
31	Santos-Echeandía J., Prego R., Cobelo-García A. and Caetano M.	Sinking particles in a Western Galician Ria (NW Iberian Peninsula): Seasonal labile and total concentrations and fluxes of particulate metals to the sediment and post-depositional transformation
32	Steinfeldt R., M. Rhein, D. Kieke	Ventilation, formation, and export rates of North Atlantic Deep Water
33	C. Theodosi, A. Gogou, A. Kokotos, A. Stavrakakis, V. Lykousis, G. Parinos, G. Hatzianestis, M. Mihalopoulos.	Seasonal and depth-related variations of trace metals, organic, elemental carbon and molecular tracers and settling particles from the open Eastern
34	Barton E.D., J. Arístegui, X.A. Álvarez Salgado, F.F. Perez, A.F.G. González, G. Rosón, P. Sangrá & CAIBEX team	Shelf-Ocean exchanges in the Canaries-Iberian marine ecosystems (CAIBEX)
35	Shang X.D., Zhu H.B., Chen G.Y., Chi X.	A study of cyclonic eddy change and phytoplankton bloom induced by 10 typhoon cases in South China Sea
<b>Circulation &amp; Gas exchanges</b>		
36	Chen Jianfang	Observing characteristics of maximum dissipation spectrum over a continental
37	Demidov Alexander, Evgeny Krayushkin	Deep water mass structure and circulation in the South Atlantic

## Session 9 – Posters

38	Oliveira A.P., Gonc Alves C., Nogueira M., Cabec Adas G., Brogueira M.J.	Biogenic trace gases CO <sub>2</sub> and N <sub>2</sub> O in Tagus estuary
39	Lauvset Siv K., Emil Jeansson, Karen M. Assmann, Tor Eldevik, Kjetil Våge, Are Olsen	Using C* to quantify entrainment into the Nordic Seas overflow water
40	Mouchet A. and Campin J.-M.	Oxygen, a tool for assessing ocean tracer transport models
41	Mouchet A. and Deleersnijder E.	Assessing the World Ocean ventilation timescales with simple analogs - the leaky funnel model
42	Xia Meng	The response of a Gulf estuary plume and hypoxia to wind forcing
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44	Capet A., Barth A., Beckers J.-M., Borges A.V., Joassin P., Meysman F., Soetaert K. and Grégoire M.	Multidecadal evolution of Black Sea hydrodynamics and biogeochemistry
45	El Moussaoui A., Perruche C., Greiner E., Ethe C. and Ghlen M.	GREEN MERCATOR: Integration of biogeochemistry into Mercator Ocean operational systems
46	Hrycik J.M., J. Chassé, C.T. Taggart, B.R. Ruddick	A new tracing tool: direct measures of particle dispersion in the ocean and application to numerical model validation
47	Jökulsdóttir T, D Archer	Investigating the response of the biological pump to rising atmospheric pCO <sub>2</sub> using a Lagrangian model of sinking biogenic aggregates
48	Rahimi H., Hamzeloo H., Vacari F. and Panza G.F.	Q-velocity model for Iranian Plateau
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50	Chu Peter C.	Multi-time Scale Analysis among Ocean Biogeochemical, Tracer, and Proxy Time Series Using the Empirical Mode Decomposition
51	Darabpour M., Dezdarani, B. Doustshenas, S.M. Nabavi, A. Savari, A. Safahieh	Comparison of Ostracod Communities Distribution in Littoral and Sub tidal regions of Bahraikan (Persian Gulf)
52	Hein J.W. de Baar, Edwin Keijzer, Martin Laan, Marck Smit, Micha Rijkenberg, Rob Middag, Patrick Laan, Loes Gerringa	Novel Ultraclean PRISTINE® sampler for the GEOTRACES Program
53	Kuss J., H.-J. Holzmann, R. Ludwig	Determination of the elemental mercury diffusion coefficient by means of molecular dynamics simulations and laboratory measurements
54	Mehrdad Mostafazadeh, Shobeyr Ashkpour Motlagh	Evaluation of Crustal Deformation in Western, Eastern and Southern Margin of Caspian Sea
55	Morris P.J., Charrette M.A., Buesseler K.O., Moore W.S., Lam P.J., Auro M., Henderson P., Manganini S.J., Murray J., Ohnemus D.C., Owens S.A., Pike S.M. and Zhou K.	The collection of trace elements and isotopes using a newly modified in situ pump – Radium as a case study
56	Morton P.L., W M. Landing, A Milne	Standardizing aerosol dust collection and analysis: results from the 2008/2009 GEOTRACES aerosol intercalibration study
57	Tiwari S.P., P. Shanmugam	Derivation of remote-sensing reflectance using optically active matters in Oceanic/Coastal Waters