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References

- Abrahamsson, K., S. Bertilsson, M. Chierici, A. Fransson, P.W. Froneman, A. Loren and E.A. Pakhomov, Variations of biochemical parameters along a transect in the southern Ocean, with special emphasis on volatile halogenated organic compounds, *Deep-Sea Res. II*, *51*, 2745-2756, 2004a.
- Abrahamsson, K., A. Loren, A. Wulff and S.-A. Wangbert, Air-sea exchange of halocarbons: the influence of diurnal and regional variations and distributions of pigments, *Deep-Sea Res. II*, *51*, 2789-2805, 2004b.
- Aït-Ameur, N. and C. Goyet, Distribution and transport of natural and anthropogenic CO₂ in the Gulf of Cadiz, *Deep-Sea Res. II*, 53, 1329-1343, 2006.
- Álvarez, M., H.K. Bryden, F.F. Pérez, A.F. Ríos, G. Rosón, Physical and biogeochemical fluxes and net budgets in the subpolar and temperate north Atlantic, *J. Mar. Res.*, 60, 191–226, 2002.
- Álvarez, M.,A.F. Ríos, G. Ronsón, Spatio-temporal variability of air-sea carbon dioxide and oxygen in the Bransfield and Gerlache Straits during austral summer 1995-1996, *Deep-Sea Res. II*, 49(4-5), 643-662, 2002b.
- Álvarez, M, A.F. Ríos F.F. Pérez, G. Rosón and H.L. Bryden, Transports and budgets of total inorganic carbon In the subpolar and temperate North Atlantic, *Global Biogeochemical Cycles* 17(1), 1002–1029, 2003.
- Álvarez M., F.F. Pérez, H. Bryden, A. F. Ríos, Physical and biogeochemical transport structure in the North Atlantic subpolar gyre, *J. Geophys. Res.*, 109, C03027, doi: 10.1029/2003JC002015, 2004.
- Álvarez M., F.F. Pérez, D. R. Shoosmith, and H. L. Bryden, Unaccounted role of Mediterranean Water in the drawdown of anthropogenic carbon, *J. Geophys. Res.*, 110, C09S03, doi:10.1029/2004JC002633 2005.
- Álvarez-Salgado X.A, F.G. Figueiras, F.F. Pèrez, S. Groom, E. Nogueira, A.V. Borges, L. Chou, C.G. Castro, G. Moncoiffe, A.F. Rios, A.E.J. Miller, M. Frankignoulle, G. Savidge & R. Wollast, Thermohaline, chemical and biological characterisation of the poleward flowing Portugal coastal counter current off NW Spain, *Prog. Oceanogr.*, *56*(2), 281-321, 2003.
- Anadón, R. and M. Estrada, The FRUELA cruises. A carbon flux study in the productive areas of the Antarctic Peninsula (December 1995-February 1996), *Deep-Sea Res. II*, 49(4-5), 567-583, 2002.
- Anadón, R. f. Alvarez-Marqués, E. Fernández, M. Varela, M. Zapata, J.M. Gasol and D. Vaqué, Vertical biogenic particle flux during Austral summer in the Antarctic Peninsula area, *Deep-Sea Res. II*, 49(4-5), 883-901, 2002.
- Anderson, L. and D. Dryssen, Chemical constituents in the Arctic Ocean in the Svalbard area, *Oceanolog. Acta, 4,* 305-311, 1981.
- Anderson, L., D. Dryssen, D.P. Jones and M.B. Lowings, Inputs and outputs of salt, freshwater, alkalinty and silica in the Arctic Ocean, *Deep-Sea Res.*, *30*, 87-94, 1983.
- Anderson, L.G. and E.P. Jones, The transport of CO₂ into Arctic and Antarctic seas: Similarities and differences in the driving processes, *J. Mar. Sys.*, 2, 81-95, 1991.

- Anderson L.G., O. Holby, R. Lindegrenand M. Ohlson, The transport of anthropogenic carbon dioxide into the Weddell Sea, *J. Geophys. Res.*, *96*, 16679-16687, 1991.
- Anderson, L.G., K. Olsson and M. Chierici, A carbon budget for the Arctic Ocean, *Global Biogeochem. Cycles*, *12*, 455-465, 1998.
- Anderson, L.G., M. Chierici, E. Fogelqvist and T. Johannessen, Flux of anthropogenic and steady state carbon into the deep Greenland Sea, *J. Geophys. Res.*, 105, 14339-14345, 2000a.
- Anderson, L.G., H. Drange, M. Chierici, A. Fransson, T. Johannessen, I. Skjelvan and F. Rey, Annual variability of carbon flux in the upper Greenland Sea, as evaluated from measured data and a box model, *Tellus*, *52B*, 1014-1024, 2000b.
- Andrié, C. J.-F. Ternon, B. fourles, Y. Gouriou and C. Oudot, Tracer distributions and deep circulation in the western tropical Atlantic during CITHER 1 and ETAMBOT cruises, 1993-1996, *J. Geophys. Res.*, 104, 21195-21216, 1999.
- Assenbaum, M., G. Reverdin, Near real-time analyses of the mesoscale circulation during the POMME experiment, *Deep-Sea Res. I, 52(8),* 1345-1373, 2005.
- Bacle J, E. Carmack and R. Ingram, Water column structure and circulation under the North Water during spring transition: April-July 1998. Deep-Sea Res. II, 49, 4907 4925, 2002.
- Bakker, D.C.E. H.J.W. De Baar and U.V. Bathmann, Changes of carbon dioxide in surface waters during spring in the Southern Ocean, *Deep-Sea Res. II*, 44(1-2), 91-128, 1997.
- Bakker, D.C.E., M.C. Nielsdóttir, P.J. Morris, H.J. Venables, A.J. Watson, The island mass effect and biological carbon uptake for the subantarctic Crozet Archipelago. *Deep-Sea Research II*, *54*(18-20), 2174-2190, 2007.
- Bates, N.R., Interannual changes of oceanic CO₂ and biogeochemical properties in the western North Atlantic subtropical gyre, *Deep-Sea Res. II*, 48(8-9), 1507-1528, 2001.
- Bates, N.R., Air-sea CO₂ fluxes and the continental shelf pump of carbon in the Chukchi Sea adjacent to the Arctic Ocean, *J. Geophys. Res.*, 111, C10013, doi:10.1029/2005JC003083, 2006.
- Bates, N.R., Michaels, A.F., and Knap, A.H., Seasonal and interannual variability of the oceanic carbon dioxide system at the U.S. JGOFS Bermuda Atlantic Time-series Site, *Deep-Sea Res. II*, 43(2-3), 347-383, 1996.
- Bates, N.R., Hansell, D.A., Carlson, C.A., and Gordon, L.I., Distribution of CO₂ species, estimates of net community production and air-sea CO₂ exchange in the Ross Sea polynya, *J. Geophys. Res.*, 103(C2), 2883-2896, 1998.
- Bates, N. R., M. H. P. Best, and D. A. Hansell, Spatio-temporal distribution of dissolved inorganic carbon and net community production in the Chukchi and Beaufort Seas, *Deep-Sea Res. II*, 52, 3303-3323, 2005a.
- Bates, N. R., D. A. Hansell, S. Bradley Moran, and L. A. Codispoti, Seasonal and spatial distribution of particulate organic matter (POM) in the Chukchi and Beaufort Seas, *Deep-Sea Res. II*, *52*, 3324-3343, 2005b.
- Bathmann, U. V. Smetacek, H.de Baar, E. Rahrbach, G. Krause, The Expeditions ANTARKTIS X/6-8 of the Research Vessel Polarstern in 1992/93, Ber. Polarforsch. 135, ISSN 0176-5027, 244pp, 1994.
- Bauch, D., P. Schlosser and R. Fairbanks, Freshwater balance and sources of deep and bottom water in the Arctic Ocean innferred from the distribution of H₂¹⁸O, *Prog. Oceanogr.*, *35*, 53-80, 1995.

- Benner, R., B. Benitez-Nelson, K. Kaiser, R.M.W. Amon, Export of young terrigenous dissolved carbon from rivers to the Arctic Ocean, *Geophys. Res. Lett.*, *31*, L05305, doi:10.1029/2003GL019251, 2004.
- Björk, G., J. Söderkvist, P. Winsor, A. Milolopoulos and M. Steele, Return of the cold halocline layer to the Amundsen Basin of the Arctic Ocean: Implications for the sea ice mass balance, *Geophys. Res. Lett.*, 29(11), 1513,doi:10.1029/2001GL014157, 2002.
- Blindheim, J. and F. Rey, Water-mass formation and distribution in the Nordic Seas during the 1990s, *J. Mar. Sci.*, *61*, 846-863, 2004.
- Borges, A.V. and M., Frankignoulle Short-term variations of the partial pressure of CO2 in surface waters of the Galician upwelling system, *Prog. Oceanogr.*, *51*(2-4), 283-302, 2001.
- Borges, A.V. and M. Frankignoulle, Distribution of surface carbon dioxide and air-sea exchange in the upwelling system off the Galician coast, *Global Biogeochem. Cycles*, *16*(2), 1020, doi:10.1029/2000GB001385, 2002a.
- Borges, A.V. and M. Frankignoulle, Aspects of inorganic carbon dynamics in the upwelling system off the Galician coast, *J. Mar. Sys.*, *32*, 181-198, 2002.
- Borsheim, K.Y., Bacterial production rates and concentrations of organic carbon at the end of the growing season in the Greenland Sea, *Aquat. Microb. Ecol.*, 21, 115-123, 2000.
- Budeus, G. and W. Schneider, On the hydrography of the Northeast Water Polynya, *J. Geophys. Res.*, 100(C3), 4287-4300, 1995.
- Bulsiewicz, K., H. Rose, O. Klatt, A. Putzka and W. Roether (1998): A capillary-column chromatographic system for efficient chlorofluorocarbon measurements in ocean waters, *J. Geophys. Res.*, 103, 15959-15970.
- Castro, C.G., A.F. Ríos, M.D. Doval and F.F. Pérez, Nutrient utilisation and chlorophyll distribution in the Atlantic sector of the Southern Ocean during Austral summer 1995-96, *Deep-Sea Res. II*, 49(4-5), 623-642, 2002.
- Chen, C.-T.A., E.P. Jones and P. Lin, Wintertime total carbon dioxide measurements in thhe Norwegian and Greenland Seas, *Deep-Sea Res. I*, *37*(9), 1455-1473, 1990.
- Chierici, M., H. Drange, L.G. Anderson and T. Johannessen, Inorganic carbon fluxes between the Greenland Sea and the surrounding areas, calculated by applying model results, *J. Mar. Sys.*, 22, 295-309, 1999.
- Chierici, M., A. Fransson, D.R. Turner, E.A. Pakhomov, P.W. Froneman, Variability in pH, fCO₂, oxygen and the flux of CO₂ in the surface water along a transect in the Atlantic sector of the Southern Ocean, *Deep-Sea Res. II*, *51*, 2773-2787, 2004.
- Chipman, D., Marra, J. and Takahashi, T., Primary production at 47°N and 20°W in the North Atlantic Ocean: A comparision between the ¹⁴C incubation method and the mixed layer budget, *Deep-Sea Res.*, 40, 151-169, 1993.
- Chung, S.-N., G.-H. Park, K. Lee, R.M. Key, F.J. Millero, R.A. Feely, C.L. Sabine, P.G. Falkowski, Postindustrial enhancement of aragonite undersaturation in the upper tropical and subtropical Atlantic Ocean: The role of fossil fuel CO₂, *Limnol. Oceanogr.*, 49(2), 315-321, 2004.
- Codispoti, L.A., Flagg, C., Kelly, V, Swift, J.H., Hydrographic conditions during the 2002 SBI process experiments, *Deep-Sea Res. II* 52, 3199-3226, 2005.
- Cooley, S.R. and P.L. Yager, Physical and biological contributions to the western tropical North Atlantic Ocean carbon sink formed by the Amazon River plume, *J. Geophys. Res.*, 111(C8), C08018, doi:10.1029/2005JC002954, 2006.

- Cooley, S.R., V.J. Coles, A. Subramaniam and P.L. Yager, Seasonal variations in the Amazon plume-related atmospheric carbon sink, *Global Biogeochemical Cycles*, 21(3), doi: 10.1029/20006GB002831, 2007.
- Cooper, L.W., R. Benner, J.W. McClelland, B.J. Peterson, R.M. Holmes, P.A. Raymond, D.A. Hansell, J.M. Grebmeier, and L.A. Codispoti, Linkages among runoff, dissolved organic carbon, and the stable oxygen isotope composition of seawater and other water mass indicators in the Arctic Ocean. *J. Geophys. Res.* 110, G02013, doi:10.1029/2005JG000031, 2005.
- Cunningham, S.A., Cruise Report #54, RRS Discovery Cruise 279, 04Apr.- 10 May 2004, A transatlantic Hydrographic Section at 24.5N, Southampton Oceanographic Centre, 194pp, 2005.
- De Barr, H.J.W., M.A. Van Leeuwe, R. Scharek, L. Goeyens and P. Fritsche, Nutrient anomalies in Fragilariopsis kerguelensis blooms, iron deficiency and the nitrate/phosphate ratio (A.C. Redfield) of the Antarctic Ocean, *Deep-Sea Research II*, 44(1-2), 229-260, 1997.
- Deming, J., L. Fortier, M. Fukuchi, The International North Water Polynya Study (NOW): a brief overview, *Deep-Sea Res. II*, 49, 4887-4892, 2002.
- Doval, M.D. X.A. Álvarez-Salgado, C.G. Castro, F.F. Pérez, Dissolved organic carbon distributions in the Bransfield and Gerlache Straits, Antarctica, *Deep-Sea Res. II*, 49(4-5), 663-674, 2002.
- Dubreuil, C., M. Denis, P. Conan and S. Roy, Spatial-temporal variability of ultraplankton vertical distribution in the Antarctic frontal zones within 60-66E, 43-46S, *Polar Biology*, 26(11), DOI 10.1007/s00300-003-0545-5, 734-735, 2003.
- Dunton, K.H., T. Weingartner and E.C. Carmack, b The nearshore Beaufort Sea ecosystem: sources and fate of marine and terrestrial carbon in arctic coastal food webs, b *Prog. Oceanogr.*, 71, 362-378, 2006.
- Dunton, K.H., J.L. Goodall, S.V. Schonberg, J.M. Grebmeier, and D.R. Maidment, Multi-decadal synthesis of benthic-pelagic coupling in the western arctic: Role of cross-shelf advective processes, *Deep-Sea Res. II*, 52, 3462-3477, 2005.
- Falck, E., Contribution of waters of Atlantic and Pacific origin in the Northeast Water Polynya, *Polar Res.* 20(2), 193–200, 2001.
- Fernandez I, C., P. Raimbault, G. Caniaux, N. Garcia, and P. Rimmelin, Influence of mesoscale eddies on nitrate distribution during the POMME program in the northeast Atlantic Ocean, *J. Mar. Sys.*, *55*(*3-4*), 155-175, 2005.
- Figueiras, F.G., R. Prego, Fiz F. Pérez, Aida F. Ríos and F. Fraga, Cruise "Galicia IX". Oceanic. Basic data.Informative data. *Marine Research Institute* 20, 1-148, 1987.
- Fogelqvist, E., J. Blindheim, T. Tanhua, S. Østerhus, E. Buch and F. Rey, Greenland-Scotland overflow studied by hydro-chemical multivariate analysis, *Deep-Sea Res. I, 50*, 73-102, 2003.
- Fraga, F., C. Mouriño, F.F. Pérez, A.F. Ríos and C. Marrasé, Cruise "Galicia VII". Basic data. Informative data. *Marine Research Institute*, 12, 1-50, 1985.
- Fraga, F. and X.A. Álvarez-Salgado, On the variation of alkalinity during phytoplankton photosynthesis, *Ciencias Marinas*, *31*(*4*), 627–639, 2005.
- Frankignoulle, M., M. Elskens, R. Biondo, I. Bourge, C. Canon, S. Desgain and P. Dauby, Distribution of inorganic carbon and related parameters in surface seawater of the English Channel in Spring 1994, *Mar. Sys.*, 7(2-4), 427-434, 1996a.

- Frankignoulle, M., I. Bourge, C. Canon and P. Dauby, Distribution of surface seawater partial CO2 pressure in the English Channel and in the Southern Bight of the North Sea, *Continental Shelf Res.*, 16, 381-395, 1996b.
- Frankignoulle M. & A.V. Borge, European continental shelf as a significant sink for atmospheric carbon dioxide, *Global Biogeochem. Cycles*, *15*(*3*), 569-576, 2001.
- Fransson, A., M. Chierici, L.G. Anderson and R. David, Transformation of carbon and oxygen in thhe surface layer of the eastern Atlantic sector of the Southern Ocean, *Deep-Sea Res. II*, 51, 2757-2772, 2004a.
- Fransson, A., M. Chierici and L.G. Anderson, Diurnal variability in the oceanic carbon dioxide system and oxygen in the Southern Ocean surface water, *Deep-Sea Res. II*, *51*, 2827-2839, 2004b.
- Friis, K., A. Körtzinger and D.W.R. Wallace, the salinity normalization of marine inorganic carbon chemistry data, *Geophys. Res. Lett.*, 30(2), 1085, doi:10.1029/2002GL015898, 2003.
- Friis, K., A. Körtzinger, and D.W.R. Wallace, Spectrophotometric pH-measurement in the ocean: requirements, design and testing of an autonomous CCD-detector system, *Limnology and Oceanography: Methods*, 2, 126-136, 2004.
- Friis, K., A. Körtzinger, J. Pätsch, and D.W.R. Wallace, On the temporal increase of anthropogenic CO₂ in the subpolar North Atlantic, *Deep-Sea Res. I*, *51*,682-691, 2005.
- Garcia, M.A. C.G. Castro, A.F. Ríos, M.D. Doval, G. Rosón, D. gomis and O. López, Water masses and distribution of physicoo-chemical properties in the Western Bransfield Strait and Gerlache Strait during austral summer 1995/96, *Deep-Sea Res. II*, 49(4-5), 595-602, 2002.
- Girton, J.B. and T.B. Sanford, Descent and modification of the overflow plume in the Denmark Strait, *J. Phys. Oceanogr.*, *33*, 1351-1364, 2003.
- Gislefoss, J.S., R. Nydal, D.J. Donahue, A.J.T. Jull, L.T. Toolin, Tracer studies of 14C in the Nordic Seas by AMS measurements, *Nuclear Instruments and Methods in Physics Res.*, *B92*, 431-435, 1994.
- Gislefoss, J.S., R. Nydal, I. Skjelvan, A. Nes, S. Østerhus, K. Holmén, T. Jull and E. Sonninen, Carbon profiles in the Nordic Seas, Radiological Dating Laboratory, Data Report (2), Trondheim-NTH, ISBN: 82-9906181-4, 61pp, 1995.
- Gislefoss, J.S., R. Nydal, D. Slagstad, E. Sonninnen and K. Holmên, Carbon time series in the Norwegian Sea, *Deep-Sea Res. I, 45*, 433-460, 1998.
- González Dávila, M., J. M. Santana-Casiano, L. Merlivat, L. Barbero-Muñoz, and E. V. Dafner, Fluxes of CO₂ between the atmosphere and the ocean during the POMME project in the northeast Atlantic Ocean during 2001, *J. Geophys. Res.*, 110, C07S11, doi:10.1029/2004JC002763, 2005.
- Gouriou, Y., B. Bourlès, H. Mercier and R. Chuchla, Deep jets in the equatorial Atlantic Ocean, *J. Geophys. Res.*, 104, 21217-21226, 1999.
- Gouriou, Y., C. Andrié, B. Bourlès, S. Freudenthal, S. Arnault, A. Aman, G. Eldin, Y. du Penhoat, F. Baurand, F. Gallois and R. Chuchla, Deep circulation in the equatorial Atlantic Ocean, *Geophys. Res. Lett.*, 28, 819-822, 2001.
- Grebmeier, J. M., and H. Rodger Harvey, The Western Arctic Shelf-Basin Interactions (SBI) project: An overview, *Deep-Sea Res. II*, *52*, 3109-3115, 2005.
- Hansell, D.A., D. Kadko and N.R. Bates, Degradation of terrigenous dissolved organic carbon in the western Arctic Ocean, *Science*, *304*, 858-861, 2004.

- Haraldsson, L., L.G. Anderson, M. Hassellöv and S. Hult, Rapid, high-precision potentiometric titration of alkalinity in ocean and sediment pore waters, *Deep Sea Res. A*, *44*, 2031-2044, 1997.
- Heeschen, K.U., R.S. Kier, G. Rehder, O. Klatt and E. Suess, Methane dynamics in the Weddell Sea determined via stable isotope ratios and CFC-11, *Global Biogeochem. Cycles*, 18, GB2012,doi:10.1029/2003GB002151, 2004.
- Hendry, R.M., H. van Aken, and I. Yashayaev, Monitoring the ventilation of the Irminger and Labrador Seas. CLIVAR Exchanges No. 40 (volume 12, No. 1), 25-27, 2007.
- Holfort, J. and T. Albrecht, Atmospheric forcing of salinity in the overflow of Denmark Strait, *Ocean Sci.*, *3*, 411-416, 2007.
- Hoppema, M., Weddell Sea as a globally siignificant coontributor to deep-sea sequestration of natural carbon dioxide, *Deep-Sea Res. I, 51*, 1169-1177, 2004.
- Huthnance, J.M., H.M. van Aken, M. White, E.D. Barton, B. Le Cann, E.F. Coelho, E.A. Fanjul, P. Miller, and J. Votorino, Ocean margin exchange water flux estimates, *J. Mar.Sys.*, 32(1-3), 107-137, 2002.
- Ingram. R., J. Bacle, D. Barber, Y. Gratton and H. Melling, An overview of physical processes in the North Water. *Deep-Sea Res. II*, 49, 4893-4906, 2002.
- Ishii, M., H.Y. Inoue, H. Matsueda and E. Tanoue, Close coupling between seasonal biological production and dynamics of dissolved inorganic carbon in the Indian Ocean sector and the western Pacific Ocean sector of the Antarctic Ocean, *Deep-Sea Res. I*, *45*(7), 1187-1290, 1998.
- Ishii, M., Inoue, H.Y., Matuseda, H., Net community production in the marginal ice zone and its importance for the variability of the oceanic pCO2 in the Southern Ocean south of Australia. *Deep-Sea Research II*, 49, 1691-1706, 2002.
- Jacquet, S.H.M., F. Dehairs, D. Cardinal, J. Navez and B. Delille, Barium distribution across the Southern Ocean frontal system in the Crozet-Kerguelen Basin, *Mar. Chem.*, 95(3-4), 149-162,2005.
- Jeansson, E., Olsson, K.A., Messias, M.-J., Kasajima, Y., Johannessen, T., Evidence of Greenland Sea water in the Iceland Basin, *Geophys. Res. Lett.*, In revision, 2008.
- Johnson, K., K.D. Willis, D.B. Butler, W.K. Johnson, and C.S. Wong, Coulometric carbon dioxide analysis for marine studies: Maximizing the performance of an automated gas extraction system and coulometric detector, *Mar. Chem.*, 44(2-4), 167-188, 1993.
- Johnson, G.C., S. Mecking, B.M. Sloyan, and S.E. Wijffels, Recent bottom water warming in the Pacific Ocean, *J. Climate*, 20, 5365-5375, doi:10.1175/2007JCL11879.1, 2007.
- Jutterström, S. and L.G. Anderson, The saturation of calcite and aragonite in the Arctic Ocean, *Mar. Chem.*, *94*, 101-110, 2005.
- Kadko, D. and R. Muench, Evaluation of shelp-basin interaction in the western Arctic by use of short-lived radium isotopes: The importance of mesoscale processes, *Deep-Sea Res. II*, *52*, 3227-3244, 2005.
- Kadko D., R.S. Pickart and J.T. Mathis, Age Characteristics of a Shelfbreak Eddy in the Western Arctic and Implications for Shelf-Basin Exchange, *J. Geophys. Res.*, 113, C02018, doi:10.1029/2007JC004429, 2008.
- Kadko D. and Aagaard K. Glimpses of Arctic Ocean shelf-basin interaction from submarine-borne radium sampling, *Deep-Sea Res I*, (in press), 2009.

- Karstensen, J., P. Schlosser, D.W.R. Wallace, J.L. Bullister and J. Blindheim, Water mass transformation in the Greenland Sea during the 1990s, J. *Geophys. Res.*, *110*, C07022, doi:10.1029/2004JC002510, 2005.
- Key, R.M., A. Kozyr, C.L. Sabine, K. Lee, R. Wanninkhof, J. Bullister, R.A. Feely, F. Millero, C. Mordy, T.-H. Peng, A global ocean carbon climatology: Results from Global Data Analysis Project (GLODAP), *Global Biogeochem. Cycles*, 18, GB4031,doi:10.1029/2004GB002247, 2004.
- Kieke, D., M. Rhein, L. Stramma, W. M. Smethie, D. A. LeBel, and W. Zenk, Changes in the CFC inventories and formation rates of Upper Labrador Sea Water, 1997-2001, *J. Phys. Oceanogr*, *36*, 64-86, 2006.
- Kieke, D., M. Rhein, L. Stramma, W. M. Smethie, J. L. Bullister, and D. A. LeBel, Changes in the pool of Labrador Sea Water in the subpolar North Atlantic, *Geophys. Res. Lett.*, *34*, L06605, doi:10.1029/2006GL028959, 2007.
- Keir, R.S., G. Rehder and M. Frankignoulle, Partial pressure and air-sea flux of CO2 in the Northeast Atlantic during September 1995, *Deep-Sea Res. II*, 48, 3179-3189, 2001.
- Keir, R.S., J. Sültenfuß, M. Rhein, G. Petrick and J. Greinert, Separation of 3He and CH4 signals on the Mid-Atlantic Ridge at 5°N and 51°N, *Geochemica et Cosmochemica Acta*, 70(23), 5766-5778, 2006.
- Körtzinger, A., L. Mintrop, J.C. Duinker, On the penetration of anthropogenic CO₂ into the North Atlantic Ocean, *J. Geophys. Res.*, 103(C9), 18681-18689, 1998.
- Körtzinger, A., M. Rhein and L. Mintrop, Anthropogenic CO₂ and CFCs in the North Atlantic Ocean a comparison of man-made tracers, *Geophys. Res. Lett.*, 26, 2065-2068, 1999.
- Körtzinger, A., W. Koeve, W. Kähler and L. Mintrop, C:N ratios in the mixed layer during the productive season in the northeast Atlantic Ocean, *Deep-Sea Res. I, 48*, 661-688, 2001.
- Körtzinger, A., A significant CO₂ sink in the tropical Atlantic Ocean associated with the Amazon River plume, *Geophys. Res. Lett.*, 30(24), 2287, doi:10.1029/2003GL018841, 2003.
- Lamb, M.F., R.A. Feely, L. Moore, and D.A. Atwood, Total CO2 and nitrate measurements in the southwest Pacific during austral autumn, 1990. NOAA Data Report ERL PMEL-42, NTIS: PB93-188415, 62 pp., 1993.
- Lamb, M.R., R.A. Feely, L. Moore, and D.A. Atwood, Total carbon dioxide, hydrographic, and nitrate measurements in the Southwest Pacific during austral autumn, 1990: Results from NOAA/PMEL CGC-90 cruise, NDP-052, CDIAC, ORNL, 1995.
- Lankhorst, M. and W. Zenk, Lagrangian observations of the middepth and deep velocity fields of the northeastern Atlantic Ocean, *J. Phy. Ocean.*, 36(1), 43-63, 2006
- Leblanc, K., B. Quéguiner, M. Fiala, S. Blain, J. Morvan and R. Corvaisier, Particulate biogenic silica and carbon production rates and particulate matter distribution in the Indian sector of the Subantarctic Ocean, *Deep-Sea Res. II*, 49(16), 3189–3206, 2002.
- Lee, K., S.-D. Choi, G.-H. Park, R. Wanninkhof, T.-H. Peng, R.M. Key, C.L. Sabine, R.A. Feely, J.L. Bullister, F.J. Millero and A. Kozyr, An updated anthropogenic CO₂ inventory in the Atlantic Ocean, *Global Biogeochem. Cycles*, *17*(*4*), 1116, doi:10.1029/2003GB002067, 2003.
- Lepore, K., S.B. Moran, J.M.Grebmeier, L.W. Cooper, C. Lalande, W. Maslowsk, V. Hill, N.R. Bates, D.A. Hansell, J.T. Mathis and R.P. Kelley, Seasonal and interannual changes in particulate organic carbon export and deposition in te Chukchi Sea, *J. Geophys. Res.*, 112(C10), C10024, doi:10.1029/2006JC003555, 2007.

- Lherminier, P., H. Mercier, C. Gourcuff, M. Alvarez, S. Bacon and C. Kermabon, Transport across the 2002 Greenland-Portugal section and comparison with 1997, *J. Geophys. Res.*, 112(C7), C07003, doi 10.1029/2006JC03716, 2007.
- Lherminier, P., H. Mercier, T. Huck, C. Gourcuff, F.F. Perez, P. Morin and C. Kermabon, The meridional overturning circulation and the subpolar byre observed at the A25-OVIDE section in June 2002 and 2004, *J. Geophys. Res., in press*, 2008.
- Lubinski, D.J., L. Polyak and S.L. Forman, Freshwater and Atlantic water inflows to the deep northern Barents and Kara seas since ca 13 14Cka: foraminifera and stable isotopes, *Quat. Sci. Rev.* 20, 1851-1879, 2001.
- Lueker, T.J., A.G. Dickson and C.D. Keeling, Ocean pCO₂ calculated from dissolved inorganic carbon, alkalinity, and equations for K₁ and K₂: validation based on laboratory measurements of CO₂ in gas and seawater at equilibrium, *Mar. Chem.*, 70, 105-119, 2000.
- Manríquez, M., C. Mouriño and F. Fraga, Cruise "Galicia IV". Basic data I. Expedition results. *Marine Research Institute*, 7,195-240, 1978.
- Mathis, J. T., D. A. Hansell and N. R. Bates, Strong hydrographic controls on spatial and seasonal variability of dissolved organic carbon in the Chukchi Sea, *Deep-Sea Res. II*, *52*, 3245-3258, 2005.
- Mathis J.T., R.S. Pickart, Hansell D.A., Kadko D., and Bates N.R., Eddy transport of organic carbon and nutrients from the Chukchi Shelf: Impact on the upper halocline of the western Arctic Ocean, *J. Geophy. Res.*, 112, C05011, doi:10.1029/2006JC003899, 2007a.
- Mathis, J.T., D.A. Hansell, D. Kadko, N.R. Bates, L.W. Cooper, Determining net dissolved organic carbon production in the hydrographically complex western Arctic Ocean, *Limnol. Oceanogr.*, *52*, 1789-1799, 2007b.
- McDonagh, E. L., H. L. Bryden, B. A. King and R. J. Sanders, The circulation of the Indian Ocean at 32°S, *Prog. Oceanogr.*, 79, 20-36, 2008.
- McKee, T.K., R.S. Pickart, and W.M. Smethie, Hydrographic Data from Endeavor 223: Formation and Spreading of the Shallow Component of the North Atlantic Deep Western Boundary Current, WHOI-95-07, 127 pp., 1995.
- McLaughlin, F.A., E.C. Carmack, R.W. Macdonald, H. Melling, J.H. Swift, P.A. Wheeler, B.F. Sherr and E.B. Sherr, The joint roles of Pacific and Atlantic-origin waters in the Canada Basin, 1997-1998, *Deep-Sea Res. I.*, 51(1), 107-128, 2004.
- McTaggart, K.E., D. Wilson, and L.J. Mangum, CTD measurements collected on Climate and Global Change Cruise along 170°W during February–April 1990. NOAA Data Report ERL PMEL-44, NTIS: PB93-226041, 265 pp., 1993.
- Melling, H., Y. Gratton, G. Ingram, Ocean circulation within the North Water Polynya of Baffin Bay, Atm. Ocean, 39(3), pp. 301-325, 2001.
- Mémery, L., G. Reverdin, J. Paillet and A. Oschiles, Introduction to the POMME special section: Thermocline ventilation and biogeochemical tracer distribution in the northeast Atlantic Ocean annul impact of mesoscale dynamics, *J. Geophys. Res.*, 110, C07S01, doi:10.1029/20005JC002976, 2005.
- Messias, M.-J., A.J. Watson, T. Johannessen, K.I.C. Oliver, K.A. Olsson, E. Fogelqvist, J. Olafsson, S. Bacon, J. Balle, N. Bergman, G. Budéus, M. Danielsen, J.-C. Gascard, E. Jeansson, S.R. Olafsdottir, K. Simonsen, T. Tanhua, K. Van Scoy, J. R. Ledwell, The Greenland Sea Tracer Experiment 1996-2002: horizontal mixing and transport of Greenland Sea Intermediate Water, *Prog. Oceanogr.*, 78, 85-105, 2008.

- Miller, L., P. Yager, K. Erickson, D. Amiel, J. Bacle, J. Cochran, M. Garneau, M. Gosselin, D. Hirschberg, B. Klein, B. LeBlanc and W. Miller., Carbon distributions and fluxes in the North Water, 1998 and 1999. *Deep-Sea Res. II*, 49, 5151 5170, 2002.
- Mintrop, L., F.F. Perez, M. Gonzalez-Davila, J.M. Santana-Casiano, and A. Körtzinger, Alkalintiy determination by potentiometric: intercalibration using three different methods, *Scienc. Mar.*, 26(1), 23-37, 2000.
- Moran, S. B., R. P. Kelly, K. Hagstrom, J. N. Smith, J. M. Grebmeier, L. W. Cooper, G. F. Cota, J. J. Walsh, N. R. Bates, and D. A. Hansell, Seasonal changes in POC export flux in the Chukchi Sea and implications for water column-benthic coupling in Arctic shelves, *Deep-Sea Res. II*, 52, 3427-3451, 2005.
- Mouriño, C., Fiz F. Pérez, Aida F. Ríos and F. Fraga, Cruise "Galicia V". Basic data. Informative data. *Marine Research Institute*, 10, 29-61, 1984.
- Mouriño, C., F.F. Pérez, A.F. Ríos, M. Manríquez, M. Estrada C. Marrasé, R. Prego and F. Fraga, Cruise "Galicia VIII". Basic data. Informative data. *Marine Research Institute*, 13, 1-108, 1985.
- Neill, C., K.M. Johnson, E. Lewis and D.W.R. Wallace, Accurate headspace analysis of fCO2 in discrete water samples using batch equilibration, *Limnol. Oceanogr.*, 42(8), 1774-1783, 1997.
- Nydal, R., J. Gislefoss, I. Skjelvan, F. Skogseth, A.J.T. Jull, D.J. Donahue, ¹⁴C profiles in the Norwegian and Greenland Seas by conventional and AMS measurements, *Radiocarbon*, 34(3), 717-726, 1992.
- Nydal, R. and J.S. Gislefoss, Further application of bomb 14C as a tracer in the atmospher and ocean, Radiocarbon, 38(3), 389-406, 1996.
- Olsen, A., A.M. Omar, R.G.J. Bellerby, T. Johannessen, U. Ninnemann, K.R. Brown, K.A. Olsson, J. Olafsson, G. Nondal, C. Kivimäe, S. Kringstad, C. Neill and S. Olafsdottir, Magnitude and origin of the anthropogenic CO₂ increase and ¹³C Suess effect in the Nordic Seas since 1981, *Global Biogeochem. Cycles*, 20(3), GB3027, doi:10.1029/2005GB02669, 2006.
- Olsson, K. and L.G. Anderson, Input and biogeochemical transformation of dissolved carbon in the Siberian shelf seas, *Continental Shelf Res.*, *17*(7), 819-883, 1997.
- Olsson, K., L.G. Anderson, M. Frank, A. Luchetta and W. Smethie, Carbon utilization in the Eurasian sector of the Arctic Ocean, *Limnol. & Oceanogr.*, 44, 95-105, 1999.
- Omar, A., T. Johannessen, S. Kaltin and A. Olsen, Anthropogenic increase of oceanic pCO₂ in the Barents Sea surface water, *J. Geophys. Res.*, 108(C12), doi:10.1029/2002JC001628, 3388, 2003.
- Omar, A., T. Johannessen, R. Bellerby, A. Olsen, L. Anderson and C. Kivimàe, Sea ice and brine formation in Storfjorden: Implications for Arctic winter air-sea CO₂ flux, in Helge Drange et al., eds., <u>The Nordic Seas: An Integrated Perspective Oceanography, Climatology, and Modelling</u>, AGU, Washington, D.C., 177-187, 2005.
- Östlund, H.G. and G. Hut, Arctic Ocean water mass balance from isotope data, *J. Geophys. Res.*, 89(C4), 6373-6381, 1984.
- Oudot, C., F.F. Ternon, C. Andrie, E.S. Braga & P. Morin, On the crossing of the equator by intermediate water masses in the western Atlantic ocean: Identification and pathways of Antarctic Intermediate Water and Upper Circumpolar Water. *J. Geophys. Res.*, 104, 20911-20926, 1999.

- Y.H. Park, R.T. Pollard, J.F. Read and V. Laboucher, A quasi-synoptic view of frontal circulation in the Crozet Basin during the Antares-4 cruise, *Deep-Sea Res. II*, 49, 1823–1842, 2002.
- Peltola, E., R. Wanninkhof, R. Feely, D. Dansell, R. Castle, D. Greeley, J.Z. Zhang, F. Millero, N. Gruber, J. Bullister and T. Graham, Inorganic and organic carbon, nutrient and oxygen data from the R/V Ronald H. Brown repeat hydrography cruise in the Atlantic Ocean: CLIVAR CO2 section A16N_2003a (4 June-11 August), NDP-085, CDIAC, Oak Ridge, TN, ORNL/CDIAC-149, 20pp, August, 2005.
- Pérez, F.F. and M. Alvarez, Mesures de pH et d'alcalinite lors de la campagne OVIDE 2002, Final Scientific Rpt., Instituto de Investigaciones Marinas, (CSIC),C/ Eduardo Cabello, Nº 6, 36208 VIGO.
- Pérez, F.F. and F. Fraga, The pH measurements in seawater on NBS scale, *Mar. Chem.*, 21, 315-327, 1987a.
- Pérez, F.F. and F. Fraga, A precise and rapid analytical procedure for alkalinity determination, *Mar. Chem. 21*, 169-182, 1987b.
- Pérez, F.F., A.F. Ríos, F. Fraga and C. Mouriño, Cruise "Galicia VI": Basic data. Informative data. *Marine Research Institute 11*, 1-38, 1987.
- Pérez, F.F., A.F. Ríos, B.B. King and R.T. Pollard, Decadal change of the θ –S relationship of the Eastern North Atlantic Central Water, *Deep-Sea Res. I,* 42(11/12), 1849-1864, 1995.
- Pérez, F.F., A.F. Ríos, C.G. Castro, F. Fraga, Mixing analysis of nutrients, oxygen and dissolved inorganic carbon in the upper and middle North Atlantic ocean east of the Azores, *J. Mar. Sys.*, 16, 219-233, 1998.
- Pérez F.F., Ríos A.F., Rellán T., Álvarez M., Improvements in a fast potentiometric seawater alkalinity determination. *Ciencias Marinas*, 26, 463-478, 2000.
- Pérez, F.F., C.G. Castro, X.A. Alvarez-Salgado and A.F. Rios, Coupling between the Iberian basin scale circulation and the Portugal boundary current system: a chemical study, *Deep-Sea Res. I, 48(6)*, 1519-1533, 2001.
- Pérez, F.F, M. Gilcoto and A.F. RÌos, Large and mesoscale variability of the water masses and the DCM the Azores Front, *J. Geophys. Res.*, 108(C7), 3215,2003.
- Pérez, F.F., M. Álvarez, M. Castaño and A. Ríos, Mesures de pH et d'alcalinte lors de la Campagne Ovide 2004, Final Scientific Report, Instituto de Investigaciones Marinas (CSIC), C/Eduardo Cabello, No. 6, 36208 VIGO, 76pp, 2004.
- Pérez, F.F., M. Vázquez-Rodríguez, E. Louarn, X.A. Padín, H. Mercier and A.F. Ríos, Temporal variability of the anthropogenic CO2 storage in the Irminger Sea, Biogeosci, 4, 1-11, 2008.
- Pickart, R. S., W. M. Smethie, Jr., J. R. N. Lazier, E. P. Jones, and W. J. Jenkins, Eddies of newly formed upper Labrador Sea Water, *J. Geophys. Res.*, 101(C9), 20,711—20,726, 1996.
- Pickart, R. S., M. A. Spall, and J. R. N. Lazier, Mid-depth ventilation in the western boundary current system of the sub-polar gyre, *Deep-Sea Res. I, 44*, 1025—1054, 1997.
- Pollard, R. R. Sanders, M. Lucas and P. Statham, The Crozet natural iron bloom and export experiment (CROZET), *Deep-Sea Res. II*, 54(18-20), 1905-1914, 2007.
- Resplandy, L., M. Levy, F. d'Ovidio, and L. Merlivat, Impact of sub-mesoscale variability in estimating the air-sea CO2 exchange: results from a model study of the POMME experiment, Global Biogeochem. Cycles, doi:10.1029/2008GB003239, in press, 2009.
- Reverdin, G., M. Assenbaum, and L. Prieur, Eastern North Atlantic Mode Waters during POMME (September 2000-2001), *J. Geophys. Res.*, 110, C07S04, doi:10.1029/2004JC002613, 2005.

- Reynolds, R. Michael, M.A. Miller and M.J. Bartholomew, Design, operation, and calibration of a shipboard fast-rotating shadowband radiometer, J. *Atm. and Oceanic Tech.*, 18(2), 200-214, 2001.
- Rhein, M., J. Fischer, W. M. Smethie, D. Smythe-Wright, R. F. Weiss, C. Mertens, D-H. Min, U. Fleischmann, and A. Putzka, Labrador Sea Water: Pathways, CFC inventory, and formation rates, *J. Phys. Oceanogr*, *32*, 648-665, 2002.
- Rhein, M. M. Walter, C. Mertens, R. Steinfeldt, and D. Kieke, The circulation of North Atlantic Deep Water at 16°N, 2000-2003, *Geophys. Res. Lett.*, 31, L14305, doi:10.1029/2004GL019993, 2004.
- Rhein, M., D. Kieke and R. Steinfeldt, Ventilation of Upper Labrador Sea Water, 2003-2005, *Geophys. Res. Lett.*, 34, L06603, doi:10.1029/2006GL028540, 2007.
- Ríos, A.F. and F.F. Pérez, Improvements in potenciometric determinations of the CO2 oceanic system using seawater sub-standards and CO₂ reference materials, *Ciencias Marinas*, 25(1), 31-49, 1999.
- Ríos, A.F., F.F. Pérez and F. Fraga, Water masses in the upper and middle North Atlantic Ocean east of the Azores, *Deep Sea Res. A*, 39(3/4), 645-658, 1992.
- Ríos, A.F., F.F. Pérez and F. Fraga, Long-term (1977-1997) measurements of carbon dioxide in the eastern North Atlantic: evaluation of anthropogenic input, *Deep-Sea Res. II*, 48(10), 2227-2239, 2001.
- Roemmich, D., J. Gilson, R. Davis, P. Sutton, S. Wijffels and S. Riser, Decadal Spinup of the South Pacific Subtropical Gyre, *J. Phys. Oceanogr.*, *37*(2), 162-173, 2007.
- Rommets, J.W., R. Dapper and H.G. Fransz, JGOFS North Atlantic R.V. Tyro Leg 3, Upper Ocean Processes, NIOZ Data Report 1991-3.
- Rudels, B., P. Eriksson, H. Grönval, R. Hietala and J. Launianen, Hydrographic observations in Denmark Strait in fall 1997 and their implications for the entrainment into the overflow plume, *Geophys. Res. Lett.*, 26(9), 1325-1328, 1999.
- Rudels, B., G. Björk, J. Nilsson, P. Winsor, I. Lake and C. Nohr, The interaction between waters from the Arctic Ocean and the Nordic Seas north of Fram Strait and along the East Greenland Current: form the Arctic Ocean-02 Oden expedition, *J. Mar. Sys.*, *55*, 1-30, 2005.
- Schneider, A., Wallace, D.W.R and Körtzinger, A., The alkalinity of the Mediterranean Sea, *Geophys. Res. Lett.*, *34*, L15608, doi:10.1029/2006GL028842, 2007.
- Smetacek, V., H. de Baar, U. Bathmann, K. Lochte, M. Rutgers van der Loeff, Ecology and biogeochemistry of the Antarctic circumpolar current during austral spring: Southern Ocean JGOFS Cruise ANT X/6 of R.V. Polarstern, Deep-Sea Research II, including CD-ROM, 44(1-2), 519 pp, 1997.
- Smethie, W.M., Jr., R.A. Fine, A. Putzka and E.P. Jones, Tracing the flow of North Atlantic Deep Water using chlorofluorocarbons, *J. Geophys. Res.*, 105(C6), 14297-14323, 2000.
- Smethie, W.M., Jr., R.A. Fine, Rates of North Atlantic Deep Water formation calculated from chlorofluorocarbon inventories, *Deep-Sea Res. I, 48*, 189-215, 2001.
- Smith, W.O., Jr., Primary productivity and new production in the Northeast Water (Greenland) Polynya during summer 1992, *J. Geophys. Res.*, 100(C3), 4357-4370, 1995.
- Soler-Aristegui, I., <u>The Roll of the North Atlantic Water Masses in the Draw Down on Anthropogenic CO₂</u>, PhD thesis, University of Southampton, UK.
- Sorai, M. and T. Ohsumi, Ocean uptake potential for carbon dioxide sequestration, *Geochem. J.*, 39, 29-45, 2005.

- Steinfeldt, R. and M. Rhein, Spreading velocities and dilution of North Atlantic Deep Water in the tropical Atlantic based on CFC time series, *J. Geophys. Res.*, 109, C03046, doi: 10.1029/2003JC002050, 2004.
- Stoll, M.H.C., H.M. van Aken, H.J.W. de Baar and C.J. de Boer, Meridional carbon dioxide transport in the northern North Atlantic Ocean, *Mar. Chem.*, *55*, 205-216, 1996a.
- Stoll, M.H.C., H.M. van Aken, H.J.W. de Baar and M. Kraak, Carbon dioxide characteristics of water masses in the northern North Atlantic Ocean, *Mar. Chem.*, *55*, 217-232, 1996b.
- Stoll, M.H.C., H.J.W. de Baar, M. Hoppema and E. Fahrbach, New early winter fCO₂ data reveal continuous uptake of carbon dioxide by the Weddell Sea, *Tellus*, 51B, 679-687, 1999.
- Stoll, M.H.C.; Bakker, K.M.J.; Nobbe, G.H.; and Haese, R.R., Continuous-flow analysis of dissolved inorganic iarbon iontent in seawater, *Anal. Chem.*, 73(17), 4111-4116, 2001.
- Stoll, M.H.C, H. Thomas, H.J.W. De Baar, I. Zondervan, E. deJong, U.V. Bathmann and E. Fahrbach, Biolgoical versus physical processes as drivers of large oscillations of the air-sea CO₂ flux in the Antartic marginal ice zone during summer, *Deep-Sea Res.*, 49, 1651-1667, 2002.
- Swift, J. and L. Codispotti, AWS02-I (Polar Star) Data Documentation, 2002.
- Tanhua, T., K.A. Olsson and E. Fogelqvist, A first study of SF6 as a transient tracer in the Southern Ocean, *Deep-Sea Res. II*, *51*, 2683-2699, 2004.
- Tanhua, T. and D.W.R. Wallace, Consistency of TTO-NAS inorganic carbon data with modern measurements, *Geophys. Res. Lett.*, *32*, L14618, doi: 1029/2005GL023248, 2005.
- Tanhua, T., K.A. Olsson, E. Jeansson, Fromation of Denmark Strait Overflow Water and its hydro-chemical composition, *J. Mar. Sys.*, *57*, 264-288, doi:10.1016/j.marsys.2005.05.003, 2005.
- Tanhua, T., K. Bulsiewicz and M. Rhein, Spreading of overflow water from the Greenland to the Labrador Sea, *Geophys. Res. Lett.*, *32*, L10605, doi:10.1029/2002GL0227700, 2005.
- Tanhua, T., A. Biastoch, A. Körtzinger, H. Lueger, C. Böning and D.W.R. Wallace, Changes of anthropogenic CO₂ and CFCs in the North Atlantic between 1981 and 2004, *Global Biogeochem. Cycles*, GB4017, doi:10.1029/2006GB002695, 2006.
- Tanhua, T., D.W. Waugh, and D.W.R. Wallace, Use of SF6 to estimate anthropogenic CO2 in the upper ocean, *J. Geophys. Res.*, 113, C04037, doi:10.1029/2007JC004416, 2008.
- Tanhua, T., Jones, E.P., Jeansson, E., Jutterström, S., Smethie, W.M.Jr., Wallace, D.W.R., Anderson, L.G., Ventilation of the Arctic Ocean: Mean ages and inventories of anthropogenic CO2 and CFC-11, J. of Geophys. Res., 114, C01002, doi:10.1029/2008JC004868, 2009.
- Tanhua, T., A. Körtzinger, K. Friis, D.W. Waugh, D.W.R. Wallace, An estimate of anthropogenic CO₂ inventory from decadal changes in oceanic carbon content, *PNAS*, *104*(9), 3037-3042, 2007.
- Taylor, J.R., K.K. Falkner, U. Schauer and M. Meredith, Quantitative considerations of dissolved barium as a tracer in the Arctic Ocean, *J. Geophys. Res.*, 108(C12), 3374, doi:10.1029/2002JC001635, 2003.
- Ternon, J.F., C. Oudot, D. Dessier and D. Diverres, A seasonal tropical sink for aatmospheric CO₂ in the Atlantic Ocean: the role of the Amazon River discharge, *Mar. Chem.*, 68, 183-201, 2000.
- Thomas, H. and V. Ittekkot, Determination of anthropogenic CO₂ in the North Atlantic Ocean using water mass ages and CO₂ equilibrium chemistry, *J. Mar. Sys.*, 27, 325-336, 2001.

- Thomas, H., Remineralisation ratios of carbon, nutrients and oxygen in the North Atlantic Ocean a field data based assessment, *Global Biogeochem. Cycles*, *16*, DOI 10.1029/2001GB001452, 2002.
- Timmermans, M.-L., P. Winsor and J.A. Whitehead, Deep-water flow over the Lomonosov Ridge in the Arctic Ocean, *J. Phys. Oceanogr.*, *35*, 1489-1493, 2005.
- Touratier, F., C. Goyet, C. Coatanoan and C. Andrié, Assessments of anthropogenic CO₂ distribution in the tropical Atlantic Ocean, *Deep-Sea Res. I*, 52, 2275-2284, 2005
- Top, Z., F. Bignami and T. Hopkins, Tritium-3He ages of deep waters in the NEW Polynya, *J. Mar. Sys.*, 10, 175-184, 1997.
- Tucker, W. and Cate, D., The 1994 Arctic Ocean Section: The first major scientific crossing of the Arctic Ocean, U.S. Army Cold Regions Research and Eng. Lab., Sp. Rep 96-23, 117pp, 1996; http://www.crrel.usace.army.mil/library/specialreports/AOS_SR96_23.pdf.
- Turner, D.R., S. Bertilsson, A. Fransson and E. Pakhomov, The SWEEDARP 1997/98 marine expedition: overview, *Deep-Sea Res. II*, *51*, 2543-2556, 2004.
- van Aken, H.M. and C.J. De Boer, On the synoptic hydrography of intermediate annu deep water masses in the Iceland Basin, *Deep Sea Res. I*, 42(2), 165-189, 1995.
- van Aken, H.M., and G. Becker, Hydrography and through-flow in the north-eastern North Atlantic Ocean: the NANSEN project. *Prog. Oceanogr.*, *38*, 29, 1996.
- van Aken, H.M., The hydrography of the mid-latitude Northeast Atlantic Ocean: II, The intermediate water masses, *Deep-Sea Res. I, 47(5)*, 789-824, 2000.
- van Aken, H.M., The hydrography of the mid-latitude Northeast Atlantic Ocean Part III, The thermocline water masses, *Deep-Sea Res. I*, 48(1), 237-267, 2001.
- van Aken, H.M., Surface currents in the Bay of Biscay as observed with drifters between 1995 and 1999, *Deep-Sea Res. I,* 49(6), 1071-1086, 2002.
- van Aken, H.M., H. van Haren and L.R.M. Maas, The high-resolution vertical structure of internal tides and near-inertial waves measured with an ADCP over the continental slope in the Bay of Biscay, *Deep-Sea Res. I*, *54*(*4*), 533-556, 2007.
- van Haren, H., L. Maas, and H.M. van Aken, On the nature of internal wave spectra near a continental slope, *Geophys. Res. Lett.*, 29(12), 10.1029/2001GL014341, 2002.
- van Haren, H., L. Maas and H. van Aken, Correction to "On the nature of internal wave spectra near a continental slope", *Geophys. Res. Lett.*, 31(1), 10.1029/2003GL016952, 2003.
- van Weering, T.C.E., H.C. De Stigter, W. Balzer, E.H.G. Epping, G. Graf, I.F. Hall, W. Helder, A. Khripounoff, L. Lohse, I.N. McCave, L. Thomsen and A. Vangriesheim, Benthic dynamics and carbon fluxes on the NW European continental margin, *Deep-Sea Res. II*, 48, 3191-3221, 2001.
- Voss, M., P. Croot, K. Lochte, M. Mills, and I. Peeken, Patterns of nitrogen fixation along 10N in the tropical Atlantic, *Geophys. Res. Lett.*, 31(23), L23S09, doi:10.1029/2004GL020127, 2004.
- Wallace, D. W. R., T.S. Hopkins, W.J. Behrens, C. Kiinder, W.O. Smith, Z. Top and I.D. Walsh,
 Collaborative research on the Northeast Water polynya: Hydrographic cruise report,
 USCGS Polar Sea cruise, July 15 August 15, 1992, Brookhaven National Lab., Upton,
 NY, informal cruise report, 1995a.
- Wallace, D. W. R., P. J. Minnett, and T.S. Hopkins, Nutrients, oxygen, and inferred new production in the northeast water polynya, 1992, *J. Geophys. Res.*, 100(C3), 4323-4341, 1995b.

- Wallace, D. W. R., and H.W. Bange, Introduction to special section: Results of the Meteor 55: Tropical SOLAS Expedition, *Geophys. Res. Lett.*, *31*, L23S01, doi:10.1029/2004GL021014, 2004.
- Wassmann, P., I.J. Andreassen and F. Rey, Seasonal variation of nutrients and suspended biomass on a transect across Nordvestbanken, north Norwegian shelf, in 1994, *Sarsia*, 84(3/4), 199-211, 1999.
- Wisegarver, D.P., J.L. Bullister, F.A. Van Woy, F.A. Menzia, R.F. Weiss, A.H. Orsi, and P.K. Salameh, Chlorofluorocarbon measurements in the southwestern Pacific during the CGC-90 Expedition. NOAA Data Report ERL PMEL-57, 98 pp., 1995.
- Wollast, R. and L. Chou, Ocean Margin EXchange in the Northern Gulf of Biscaye: OMEX-1. An introduction, *Deep-Sea Res. II*, 48(14-15), 2971-2978, 2001.
- Wollast, R. and L. Chou, The carbon cycle at the ocean margin in the northern Gulf of Biscay, *Deep-Sea Res. II*, 48, 3265-3293, 2001.
- Yager, P.L., D.W.R. Wallace, K.M. Johnson, W.O. Smith, Jr., P.J. Minnett and J.W. Deming, The northeast water polynya as an atmospheric CO₂ sink: A seasonal rectification hypothesis, *J. Geophys. Res.*, 100(C3), 4389-4399, 1995.
- Yashayaev, I., M. Bersch, and H.M. van Aken, Spreading of the Labrador Sea Water to the Irminger and Iceland basins, *Geophys. Res. Lett.*, *34*, L10602, doi:10.1029/2006gl028999, 2007a.
- Yashayaev, I., H. M. van Aken, N. P. Holliday, and M. Bersch, Transformation of the Labrador Sea Water in the subpolar North Atlantic, *Geophys. Res. Lett.*, *34*, L22605, doi:10.1029/2007GL031812, 2007b.
- Yashayaev, N. P. Holliday, M. Bersch I., and H. M. van Aken, The history of Labrador Sea Water: Production, Spreading, Transformation and Loss. In: <u>Arctic-Subarctic Ocean Fluxes</u>, R.R. Dickson, J. Meincke, and P. Rhines (Eds.) Springer, pp. 569-612, 2008.