

Steinfeldt, R., **M. Rhein** and D. Kieke (2024), Anthropogenic carbon storage and its decadal changes in the Atlantic, 1990 -2010. *Biogeosciences*, 21, 3839–3867, 2024 doi: <https://doi.org/10.5194/bg-21-3839-2024>

Wett, S., **M. Rhein**, D. Kieke, C. Mertens, and M. Moritz, (2023) Meridional Connectivity of a 25-year Observational AMOC Record at 47°N. *Geophys. Res. Lett.* doi: [10.1029/2023GL103284](https://doi.org/10.1029/2023GL103284)

Wendisch, M., M. Brückner, S. Crewell, A. Ehrlich, J. Notholt, C. Lüpkes, A. Macke, J.P. Burrows, A. Rinke, J. Quaas, M. Maturilli, V. Schemann, M.D. Shupe, E.F. Akansu, C. Barrientos-Velasco, K. Bärfuss, A.-M. Blechschmidt, K. Block, I. Bougoudis, H. Bozem, C. Böckmann, A. Bracher, H. Bresson, L. Bretschneider, M. Buschmann, D.G. Chechin, J. Chylik, S. Dahlke, H. Deneke, K. Dethloff, T. Donth, W. Dorn, R. Dupuy, K. Ebell, U. Egerer, R. Engelmann, O. Eppers, R. Gerdes, R. Gierens, I.V. Gorodetskaya, M. Gottschalk, H. Griesche, V.M. Gryanik, D. Handorf, B. Harm-Altstädter, J. Hartmann, M. Hartmann, B. Heinold, A. Herber, H. Herrmann, G. Heygster, I. Höschel, Z. Hofmann, J. Hölemann, A. Hünerbein, S. Jafariserajehlou, E. Jäkel, C. Jacobi, M. Janout, F. Jansen, O. Jourdan, Z. Jurányi, H. Kalesse-Los, T. Kanzow, R. Käthner, L.L. Kliesch, M. Klingebiel, E.M. Knudsen, T. Kovács, W. Körtke, D. Krampe, J. Kretzschmar, D. Kreyling, B. Kulla, D. Kunkel, A. Lampert, M. Lauer, L. Lelli, A. von Lerber, O. Linke, U. Löhnert, M. Lonardi, S.N. Losa, M. Losch, M. Maahn, M. Mech, L. Mei, S. Mertes, E. Metzner, D. Mewes, J. Michaelis, G. Mioche, M. Moser, K. Nakoudi, R. Neggers, R. Neuber, T. Nomokonova, J. Oelker, I. Papakonstantinou-Presvelou, F. Pätzold, V. Pefanis, C. Pohl, M. van Pinxteren, A. Radovan, **M. Rhein**, M. Rex, A. Richter, N. Risse, C. Ritter, P. Rostosky, V.V. Rozanov, E. Ruiz Donoso, P. Saavedra-Garfias, M. Salzmann, J. Schacht, M. Schäfer, J. Schneider, N. Schnierstein, P. Seifert, S. Seo, H. Siebert, M.A. Soppa, G. Spreen, I.S. Stachlewska, J. Stapf, F. Stratmann, I. Tegen, C. Viceto, C. Voigt, M. Vountas, A. Walbröl, M. Walter, B. Wehner, H. Wex, S. Willmes, M. Zanatta, und S. Zeppenfeld (2022). Atmospheric and Surface Processes, and Feedback Mechanisms Determining Arctic Amplification: A Review of First Results and Prospects of the (AC)3 Project, *Bulletin of the American Meteorological Society* (published online ahead of print 2022) doi:[10.1175/BAMS-D-21-0218.1](https://doi.org/10.1175/BAMS-D-21-0218.1).

Börgel, F., M. Meier, M. Gröger, **M. Rhein**, C. Dutheil und J.M. Kaiser (2022), Atlantic Multidecadal Variability and the implications for North European precipitation. *Env. Res. Lett.*, doi:[10.1088/1748-9326/ac5ca1](https://doi.org/10.1088/1748-9326/ac5ca1).

Löb J, J. Köhler, M. Walter, C. Mertens, und M. Rhein (2021), Time series of near-inertial gravity wave energy fluxes: The effect of a strong wind event. *J. Geophys. Res. Oceans*, 126, e2021JC017472, doi:[10.1029/2021JC017472](https://doi.org/10.1029/2021JC017472).

Berx, B., D. Volkov, J. Baehr, M.O. Baringer, P. Brandt, K. Burmeister, S. Cunningham, M.F. de Jong, L. de Steur, S. Dong, E. Frajka-Williams, G.J. Goni, N.P. Holliday, R. Hummels, R. Ingvaldsen, K. Jochumsen, W. Johns, S. Jónsson, J. Karstensen, D. Kieke, R. Krishfield, M. Lankhorst, K.M.H. Larsen, I. Le Bras, C.M. Lee, F. Li, S. Lozier, A. Macrander, G. McCarthy, C. Mertens, B. Moat, M. Moritz, R. Perez, I. Polyakov, A. Proshutinsky, B. Rabe, **M. Rhein**, C. Schmid, Ø. Skagseth, D.A. Smeed, M.-L. Timmermans, W.-J. von Appen, B. Williams, R. Woodgate, und I. Yashayaev (2021), Climate-relevant ocean transport measurements in the Atlantic and Arctic Oceans. Pp. 10–11 in *Frontiers in Ocean Observing: Documenting Ecosystems, Understanding Environmental Changes, Forecasting Hazards*. E.S. Kappel, S.K. Juniper, S. Seeyave, E. Smith, and M. Visbeck, eds, A Supplement to *Oceanography* 34(4), doi:[10.5670/oceanog.2021.supplement.02-04](https://doi.org/10.5670/oceanog.2021.supplement.02-04).

Moritz, M., K. Jochumsen, D. Kieke, B. Klein, H. Klein, M. Köllner, und M. Rhein (2021), Volume transport time series and variability of the North Atlantic Eastern Boundary Current at Goban Spur. *Journal of Geophysical Research: Oceans*, 126, e2021JC017393, doi:[10.1029/2021JC017393](https://doi.org/10.1029/2021JC017393).

Huhn, O., M. Rhein, T. Kanzow, J. Schaffer, und J. Sültenfuß (2021), Submarine meltwater from Nioghalvfjærdsbræ (79 North Glacier), Northeast Greenland. *Journal of Geophysical Research: Oceans*, 126, e2021JC017224, doi:[10.1029/2021JC017224](https://doi.org/10.1029/2021JC017224).

- Nowitzki, H., M. Rhein, D. Kieke, and C. Mertens (2021) Trends and transport variability in the subpolar eastern Atlantic. *Journal of Geophysical Research: Oceans* 126, e2020JC016693. <https://doi.org/10.1029/2020JC016693>
- Lüb, J., Köhler, J., Mertens, C., Walter, M., Li, J-S. von Storch, Z. Zhao and M. Rhein, (2020). Observations of the low-mode internal tide and its interaction with mesoscale flow south of the Azores. *Journal of Geophysical Research: Oceans*, 125, e2019JC015879. doi: [10.1029/2019JC015879](https://doi.org/10.1029/2019JC015879)
- Stendardo, I., Rhein, M., & Steinfeldt, R. (2020). The North Atlantic Current and its volume and freshwater transports in the subpolar North Atlantic, time period 1993–2016. *Journal of Geophysical Research: Oceans*, 125, e2020JC016065. <https://doi.org/10.1029/2020JC016065>
- McCarthy, G.D., P. J. Brown, C. N. Flagg, G. Goni, L. Houpert, C. W. Hughes, R. Hummels, M. Inall, K. Jochumsen, K. M. H. Larsen, P. Lherminier, C. S. Meinen, B. I. Moat, D. Rayner, **M. Rhein**, A. Roessler, C. Schmid, D. A. Smeed (2020) Sustainable observations of the AMOC: Methodology and Technology. *Rev. Geophys.* 58, e2019RG000654 doi: [10.1029/2019RG000654](https://doi.org/10.1029/2019RG000654).
- Köhler, J., M. Walter, C. Mertens, J. Stiehler, Z. Li, Z. Zhao, J.-S. von Storch, and M. Rhein (2019) Energy flux observations in an internal tide beam in the eastern North Atlantic. *J. Geophys. Res.* 124, 5747-5764.
- Frajka-Williams E, Ansorge, J, Baehr J, Bryden HL, Chidichimo MP, Cunningham SA, Danabasoglu G, Dong S, Donohue KA, Elipot S, Heimbach P, Holliday NP, Hummels R, Jackson LC, Karstensen J, Lankhorst M, Le Bras IA, Lozier MS, McDonagh EL, Meinen CS, Mercier H, Moat BI, Perez RC, Piecuch CG, **Rhein M**, Srokosz MA, Trenberth KE, Bacon S, Forget G, Goni G, Kieke D, Koelling J, Lamont T, McCarthy GD, Mertens C, Send U, Smeed DA, Speich S, van den Berg M, Volkov D and Wilson C (2019) Atlantic Meridional Overturning Circulation: Observed Transport and Variability. *Front. Mar. Sci.* 6:260. doi: [10.3389/fmars.2019.00260](https://doi.org/10.3389/fmars.2019.00260)
- Rhein, M., Mertens, C., & Roessler, A. (2019). Observed transport decline at 47°N, western Atlantic. *Journal of Geophysical Research: Oceans*, 124. <https://doi.org/10.1029/2019JC014993>
- Jenkins, W.J., S.C. Doney, M. Fendrock, R. Fine, T. Gamo, P. Jean-Baptiste, R. Key, B. Klein, J.E. Lupton, R. Newton, **M. Rhein**, W. Roether, Y. Sano, R. Schlitzer, and J. Swift (2019) A comprehensive global oceanic data set of helium isotope and tritium measurements. *Earth Syst. Sci. Data*, 11, 441–454, 2019; <https://doi.org/10.5194/essd-11-441-2019>
- Rhein, M., (2019) Taking a close look at ocean circulation. *SCIENCE* 363, p 456-457
[10.1126/science.aaw3111](https://doi.org/10.1126/science.aaw3111)
- Mertens, C., J. Köhler, M. Walter, J.S. von Storch, M. Rhein (2019), Observation and models of low mode internal waves in the ocean, in: *Energy Transfers in Atmosphere and Ocean*, Carsten Eden and Armin Iske, Eds., Springer, Switzerland, doi: [10.1007/978-3-030-05704-6](https://doi.org/10.1007/978-3-030-05704-6).
- Rhein, M., R. Steinfeldt, O. Huhn, J. Sültenfuß, T. Breckenfelder (2018), Greenland submarine melt water observed in the Labrador and Irminger Sea. *Geophys. Res. Lett.*, 45, 10,570-10,578, doi:[10.1029/2018GL079110](https://doi.org/10.1029/2018GL079110).
- Huhn, O., T. Hattermann, P. E. D. Davis, E. Dunker, H. H. Hellmer, K. W. Nicholls, S. Østerhus, M. **Rhein**, M. Schröder, J. Sültenfuß (2018), Basal melt and freezing rates from first noble gas samples beneath an ice shelf. *Geophys. Res. Lett.*, 45, 8455-8461, doi:[10.1029/2018GL079706](https://doi.org/10.1029/2018GL079706).
- Rhein, M., R. Steinfeldt, D. Kieke, I. Stendardo, and I. Yashayaev (2017), Ventilation variability of Labrador Sea Water and its impact on oxygen and anthropogenic carbon, *Phil. Trans. R. Soc. A*, ,

doi:10.1098/rsta.2016.0321.

Breckenfelder, T., M. Rhein, A. Roessler, C. W. Böning, A. Biastoch, E. Behrens, and C. Mertens (2017), Flow paths and variability of the North Atlantic Current: A comparison of observations and a high-resolution model. *J. Geophys. Res.*, 122, 2686-2708, doi:10.1002/2016JC012444.

Hellmer, H., M. Rhein, G. Heinemann, J. Abalichin, W. Abouchami, O. Baars, U. Cubasch, K. Dethloff, L. Ebner, E. Fahrback, M. Frank, G. Gollan, R. Greatbach, J. Grieger, V. Gryanik, M. Gryscha, J. Hauck, M. Hoppema, O. Huhn, T. Kanzow, B. Koch, G. König-Langlo, U. Langematz, G. Leckebusch, C. Lüpkes, S. Paul, A. Rinke, B. Rost, M. Rutgers van der Loeff, M. Schröder, G. Seckmeyer, T. Stichel, V. Strass, R. Timmermann, S. Trimborn, U. Ulbrich, C. Venchiarutti, U. Wacker, S. Willmes, D. Wolf-Gladrow (2016), Meteorology and oceanography of the Atlantic sector of the Southern Ocean-A review of recent achievements, *Ocean Dyn.*, 66(11), 1379-1414, doi:10.1007/s10236-016-0988-1.

Stendardo, I., M. Rhein, and R. Hollmann (2016), A high resolution salinity time series 1993-2012 in the North Atlantic from Argo and altimeter data, *J. Geophys. Res.*, 121, 2523-2551, doi:10.1002/2015JC011439.

Steinfeldt, R., J. Sültenfuß, M. Dengler, T. Fischer, and M. Rhein (2015), Coastal upwelling off Peru and Mauritania inferred from helium isotope disequilibrium, *Biogeosci.*, 12, 75197533, doi:10.5194/bg-12-7519-2015

Schneider, L., D. Kieke, K. Jochumsen, E. Colbourne, I. Yashayaev, R. Steinfeldt, E. Varotsou, N. Serra, and M. Rhein (2015), Variability of Labrador Sea Water exported through Flemish Pass during 1993 - 2013, *J. Geophys. Res.*, 120, 5514-5533, doi:10.1002/2015JC010939.

Roessler, A., M. Rhein, D. Kieke und C. Mertens (2015), Long-term observations of North Atlantic Current transport at the gateway between western and eastern Atlantic, *J. Geophys. Res.*, 120, doi:10.1002/2014JC010662.

Rhein, M., D. Kieke, and R. Steinfeldt (2015), Advection of North Atlantic Deep Water from the Labrador Sea to the southern hemisphere, *J. Geophys. Res.*, 120, 2471-2487, doi:10.1002/2014JC010605.

Fischer, J., J. Karstensen, R. Zantopp, M. Visbeck, A. Biastoch, E. Behrens, C. Böning, D. Quadfasel, K. Jochumsen, H. Valdimarsson, S. Jonsson, H. P. Naomi, S. Bacon, S. Dye, **M. Rhein**, and C. Mertens (2015), Intra-seasonal variability of the Deep Western Boundary Current in the western subpolar North Atlantic. *Prog. Oceanogr.*, 132(3), 233-249, doi:10.1016/j.pocean.2014.04.002.

Stendardo, I., D. Kieke, M. Rhein, N. Gruber, and R. Steinfeldt (2015), Interannual to decadal oxygen variability in the mid-depth water masses of the eastern North Atlantic, *Deep-Sea Res. I*, 95(1), 85-98.

Mertens, C., M. Rhein, M. Walter, C. W. Böning, E. Behrens, D. Kieke, R. Steinfeldt, and U. Stöber (2014), Circulation and transports in the Newfoundland Basin, western subpolar North Atlantic, *J. Geophys. Res.*, 119, 7772-7793, doi:10.1002/2014JC010019.

Kucera, M., M. Rhein, and G. Kohl (2014), Oceanography and geodynamics in the NW Atlantic and the Baffin Bay - Cruise No. MSM09 - July 23-October 29, 2008 - Bremen (Germany) - Ponta Delgada (Azores). *MARIA S. MERIAN-Berichte MSM09*, 128 pp., DFG-Senatskommission für Ozeanographie, http://dx.doi.org/10.2312/cr_msm09.

Scholz, P., D. Kieke, G. Lohmann, M. Ionita, and M. Rhein (2014), Evaluation of Labrador Sea Water formation in a global Finite-Element Sea-Ice Ocean Model setup, based on a comparison with observational data *J. Geophys. Res.*, 119, 1644-1667, doi:10.1002/2013JC009232.

Alexander, L., S. Allen, N.L. Bindoff, F.M. Breon, J. Church, U. Cubasch, S. Emori, P. Forster, P. Friedlingstein, N. Gillet, J. Gregory, D. Hartmann, E. Jansen, B. Kirtman, R. Knutti, K. Kumar, P. Lemke,

J. Marotzke, V. Masson-Delmotte, G. Meehl, I. Mokhov, S. Piao, G.K. Plattner, Qin Dahe, V. Ramaswamy, D. Randall, **M. Rhein**, M. Rojas, C. Sabine, D. Shindell, T.F. Stocker, L. Talley, D. Vaughan, and S.P. Xie (2014), Summary for Policymakers, in: *In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Köhler, J., C. Mertens, M. Walter, U. Stöber, M. Rhein, and T. Kanzow (2013), Variability in the internal wave field induced by the Atlantic Deep Western Boundary Current at 16°N. *J. Phys. Oceanogr.*, 44(2), 492-516.

Rhein, M., S.R. Rintoul, S. Aoki, E. Campos, D. Chambers, R. A. Feely, S. Gulev, G. C. Johnson, S.A. Josey, A. Kostianoy, C. Mauritzen, D. Roemmich, L. D. Talley and F. Wang (2013), Observations: Ocean, in: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Kapitel 3, [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Stocker, T.F., D. Qin, G.-K. Plattner, L.V. Alexander, S.K. Allen, N.L. Bindoff, F.-M. Breon, J.A. Church, U. Cubasch, S. Emori, P. Forster, P. Friedlingstein, N. Gillett, J.M. Gregory, D.L. Hartmann, E. Jansen, B. Kirtman, R. Knutti, K. Krishna Kumar, P. Lemke, J. Marotzke, V. Masson-Delmotte, G.A. Meehl, I.I. Mokhov, S. Piao, V. Ramaswamy, D. Randall, **M. Rhein**, M. Rojas, C. Sabine, D. Shindell, L.D. Talley, D.G. Vaughan, and S.-P. Xie (2013), Technical Summary, *The IPCC 5th Assessment Report*, [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Bullister, J., M. Rhein, and C. Mauritzen (2013), Deep Water Formation. In: *Ocean Circulation and Climate - Observing and Modelling the Global Ocean, second edition*, Eds.: G. Siedler, J. Church, J. Gould and S. Griffies, Academic Press.

Huhn, O., M. Rhein, M. Hoppema, and S. van Heuven (2012), Decline of deep and bottom water ventilation and slowing down of anthropogenic carbon storage in the Weddell Sea, 1984-2011. *Deep-Sea Res. I*, 76, 66-84.

Rhein, M., D. Kieke, S. Hüttl-Kabus, A. Roessler, C. Mertens, R. Meissner, B. Klein, C. W. Böning, and I. Yashayaev (2011), Deep-water formation, the subpolar gyre, and the meridional overturning circulation in the subpolar North Atlantic. *Deep-Sea Res. II*, 58(17-18), 1819-1832.

Jochumsen, K., M. Rhein, S. Hüttl-Kabus, and C. W. Böning (2010), On the propagation and decay of North Brazil Current Rings. *J. Geophys. Res.*, 115, C10004, doi:10.1029/2009JC006042.

Rhein, M., M. Dengler, J. Sültenfuß, R. Hummels, S. Hüttl-Kabus, and B. Bourles (2010), Upwelling in the Equatorial Atlantic inferred from helium isotope disequilibrium. *J. Geophys. Res.*, 115, C08021, doi:10.1029/2009JC005772.

Mauldin, A., P. Schlosser, R. Newton, W. M. Smethie Jr., R. Bayer, **M. Rhein**, and E. P. Jones (2010), The velocity and mixing timescale of the Arctic Ocean Boundary Current estimated with transient tracers. *J. Geophys. Res.*, 115, C08002, doi:10.1029/2009JC005965.

Walter, M., C. Mertens, U. Stöber, C. R. German, D. R. Yoerger, J. Sültenfuß, **M. Rhein**, B. Melchert, and E. T. Baker (2010), Rapid dispersal of a hydrothermal plume by turbulent mixing. *Deep-Sea Res. I*, 57(8), 931-945.

Steinfeldt, R., T. Tanhua, J. L. Bullister, R. M. Key, **M. Rhein**, and J. Köhler (2009), Atlantic CFC data in CARINA. *Earth System Science Data*, 2, 1-15.

Cisewski, B., V. HJ. Strass, **M. Rhein**, and S. Krägefsky (2009) Seasonal variation of diel vertical migration of zooplankton from ADCP backscatter time series data in the Lazarev Sea, Antarctica. *Deep-Sea Res. I*, 57(1), 78-94

Kieke, D., B. Klein, L. Stramma, **M. Rhein**, and K. P. Koltermann (2009), Variability and propagation of Labrador Sea Water in the southern subpolar North Atlantic. *Deep-Sea Res. I*, 56(20), 1656-1674.

Steinfeldt, R., M. Rhein, J. L. Bullister, and T. Tanhua (2008), Inventory changes in anthropogenic carbon from 1997-2003 in the Atlantic Ocean between 20°S and 65°N. *Global Biogeochem. Cycles*, doi: 10.1029/2008GB003311.

Mertens, C., M. Rhein, K. Kirchner, and M. Walter (2008), Modulation of the Inflow into the Caribbean Sea by North Brazil Current Rings. *Deep-Sea Res. I*, 56(7), 1057-1076.

Kirchner, K., M. Rhein, S. Hüttl-Kabus, and C. W. Böning (2009), On the spreading of South Atlantic Water into the northern hemisphere. *J. Geophys. Res.*, doi: 10.1029/2008JC005165

Sültenfuß, J., M. Rhein, and W. Roether (2009), The Bremen Mass Spectrometric Facility for the measurement of helium isotopes, neon, and tritium in water. *Isotopes in Environmental and Health Studies*, 45(2), 1-13.

Keir, R. S., O. Schmale, M. Walter, J. Sültenfuß, R. Seifert and M. Rhein (2008), Flux and dispersion of gases from the 'Drachenschlund' hydrothermal vent at 8°18'S, 13°30'W. *Earth Planet. Sci. Lett.*, 270(3-4), 338-348.

LeBel, D. A., W. M. Smethie Jr., **M. Rhein**, D. Kieke, R. A. Fine, J. L. Bullister, D.-H. Min, W. Roether, R. F. Weiss, C. Andrie, D. Smythe-Wright, and E. P. Jones (2008), The distribution of CFC-11 in the North Atlantic during WOCE: Inventories and calculated water mass formation rates. *Deep-Sea Res. I*, doi:10.1016/j.dsr.2008.03.009.

Stöber, U., M. Walter, C. Mertens, and M. Rhein (2008), Mixing estimates from hydrographic measurements in the Deep Western Boundary Current of the North Atlantic. *Deep-Sea Res. I*, 55(6), 721-736.

Huhn, O., H. H. Hellmer, **M. Rhein**, W. Roether, C. Rodehacke, M. Schodlok, and M. Schröder (2008), Evidence of deep and bottom water formation in the western Weddell Sea. *Deep-Sea Res. II*, 55(8-9), 1098-1116.

Kirchner, K., M. Rhein, C. Mertens, C. W. Böning, and S. Hüttl (2008), Observed and modeled MOC related flow into the Caribbean. *J. Geophys. Res.*, 113, C03028, doi:10.1029/2007JC004320.

Haine, T., C. W. Böning, P. Brandt, J. Fischer, A. Funk, D. Kieke, E. Kvaleberg, and M. Rhein (2008), North Atlantic Deep Water Transformation in the Labrador Sea, Recirculation through the Subpolar Gyre, and Discharge to the Subtropics. In: *Arctic-Subarctic Ocean Fluxes - Defining the Role of the Northern Seas in Climate*, R. R. Dickson, J. Meincke, P. Rhines (Eds.), Springer, Vol. X, chap. 26.

Fine, R. A., W. M. Smethie Jr., J. L. Bullister, D. H. Min, M. J. Warner, M. Rhein, A. Poisson, and R. F. Weiss (2007), Decadal ventilation and mixing of Indian Ocean water. *Deep-Sea Res. I*, 55(1), 20-37.

Kieke, D., M. Rhein, L. Stramma, W. M. Smethie, J. L. Bullister, and D. A. LeBel (2007), Changes in the pool of Labrador Sea Water in the subpolar North Atlantic. *Geophys. Res. Lett.*, 34, L06605, doi:10.1029/2006GL028959.

Rhein, M. D. Kieke, and R. Steinfeldt (2007), Ventilation of Upper Labrador Sea Water, 2003-2005. *Geophys. Res. Lett.*, 34, L06603, doi:10.1029/2006GL028540

Smethie Jr., W. M., D. A. LeBel, R. A. Fine, M. Rhein, and D. Kieke (2007), Strength and variability of the deep limb of the North Atlantic meridional overturning circulation from chlorofluorocarbon inventories. In: *Ocean Circulation: Mechanisms and Impacts*, A. Schmittner, J. Chiang, and S. Hemming (eds.), Geophysical Monograph Series, Vol. 173, pgs. 119-130.

Steinfeldt, R., M. Rhein, and M. Walter (2007), NADW transformation at the western boundary between 66°W/20°N and 10°N. *Deep-Sea Res. I*, 54(6), 835-855.

Kanzow, T., U. Send, W. Zenk, M. Rhein, and A. Chave (2006), Monitoring the integrated deep meridional flow in the tropical North Atlantic. *Deep-Sea Res. I*, 53(3), 528-546.

Keir, R., J. Sültenfuß, M. Rhein, G. Petrick, and J. Greinert (2006), Separation of ³He and CH₄ signals on the Mid-Atlantic Ridge at 51°N and 5°N. *Geochim. Cosmochim. Acta*, 70(23), 5766-5778.

Kieke, D. and M. Rhein (2006), Variability of the overflow water transport in the western subpolar North Atlantic, 1950-1997. *J. Phys. Oceanogr.*, 36(3), 435-456.

Kieke, D., M. Rhein, L. Stramma, W. M. Smethie, D. A. LeBel, and W. Zenk (2006), Changes in the CFC inventories and formation rates of Upper Labrador Sea Water, 1997-2001. *J. Phys. Oceanogr.*, 36(1), 64-86.

Keir, R., J. Greinert, G. Petrick, M. Rhein, K. Führhaupter, and J. Sültenfuß (2005), Methane and methane carbon isotope ratios in the Northeast Atlantic including the Mid-Atlantic Ridge (50°N). *Deep-Sea Res. I*, 52(6), 1043-1070.

Rhein, M., J. Fischer, and J. Mortensen (Eds.) (2005), Circulation and Variability in the Subpolar North Atlantic. Cruise No 59, "Ponta Delgada - Reykjavik - St. John's - Bremerhaven", June 26 - October 5, 2003. *METEOR-Berichte*, Universität Hamburg, 05-3, 113 pp

Rhein, M., K. Kirchner, C. Mertens, R. Steinfeldt, M. Walter, and U. Fleischmann-Wischnath (2005), Transport of South Atlantic Water through the passages south of Guadeloupe and across 16°N, 2000-2004. *Deep-Sea Res. I*, 52(12), 2234-2249.

Rhein, M., H. Meggers, and F. Schott (Eds.) (2005), Circulation and Particle Fluxes "Mediterranean - Canary - Tropical Atlantic - Caribbean". Cruise No 53, March 30 - July 5, 2002. *METEOR-Berichte*, Universität Hamburg, 05-2, 123 pp.

Rhein, M. and L. Stramma (2005), Seasonal fluctuations in the Deep Western Boundary Current around the eastern tip of Brazil. *Deep-Sea Res. I*, 52(8), 1414-1428.

Stramma, L., M. Rhein, P. Brandt, M. Dengler, C. Böning, and M. Walter (2005), Upper ocean circulation in the western tropical Atlantic in boreal fall 2000. *Deep-Sea Res. I*, 52(2), 221-240.

Tanhua, T., K. Bultsiewicz, and M. Rhein (2005), Spreading of Overflow Water from the Greenland to the Labrador Sea. *Geophys. Res. Lett.*, 32(10), L10605, doi: 10.1029/2005GL022700.

Walter, M., C. Mertens, and M. Rhein (2005), Mixing estimates from a large-scale hydrographic survey in the North Atlantic. *Geophys. Res. Lett.*, 32(13), L13605, doi: 10.1029/2005GL022471.

Klein, B. and M. Rhein (2004), Equatorial upwelling rates inferred from helium isotope data: A novel approach. *Geophys. Res. Lett.*, 31(23), L23308, doi:10.1029/2004GL021262.

Rhein, M., M. Walter, C. Mertens, R. Steinfeldt, and D. Kieke (2004), The circulation of North Atlantic Deep Water at 16°N, 2000 - 2003. *Geophys. Res. Lett.*, 31(L14305), doi:10.1029/2004GL019993.

Stramma, L., D. Kieke, M. Rhein, F. Schott, I. Yashayaev, and K. P. Koltermann (2004), Deep water changes at the western boundary of the subpolar North Atlantic during 1996-2001. *Deep-Sea Res. I*, 51(8), 1033-1056.

Steinfeldt, R. and M. Rhein (2004), 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.

Böning, C. W., M. Rhein, J. Dengg and C. Dorow (2003), Modeling CFC inventories and formation rates of Labrador Sea Water. *Geophys. Res. Lett.*, 30(2), 1050, doi: 10.1029/2002GL014855.

Schott, F., M. Dengler, P. Brandt, K. Affler, J. Fischer, B. Bourles, Y. Gouriou, R. L. Molinari, and M. Rhein (2003), The zonal currents and transports at 35°W in the tropical Atlantic. *Geophys. Res. Lett.*, 30(7), 1349, doi:10.1029/2002GL016849.

Fine, R. A., M. Rhein and C. Andrié (2002), Using a CFC effective age to estimate propagation and storage of climate anomalies in the deep western North Atlantic. *Geophys. Res. Lett.*, 29(4), 2227, doi:10.1029/2002GL015618.

Plähn, O., B. Baschek, T. H. Badewien, M. Walter and M. Rhein (2002), Importance of the Gulf of Aqaba for the formation of bottom water in the Red Sea. *J. Geophys. Res.*, 107(C8), doi:10.1029/C2000JC000342.

Rhein, M., J. Fischer, W. M. Smethie, D. Smythe-Wright, R. F. Weiss, C. Mertens, D. H. Min, U. Fleischmann, and A. Putzka (2002), Labrador Sea Water: pathways, CFC-inventory and formation rates. *J. Phys. Oceanogr.*, 32(2), 648-665.

Andrié, C., M. Rhein, S. Freudenthal and O. Plähn (2002), CFC time series in the deep water masses of the western tropical Atlantic, 1990-1999. *Deep-Sea Res. I*, 49(2), 281-304.

Stramma, L. and M. Rhein (2001), Variability in the Deep Western Boundary Current in the equatorial Atlantic at 44°W. *Geophys. Res. Lett.*, 28(8), 1623-1626.

Visbeck, M. and M. Rhein (2000), Is bottom boundary-layer mixing slowly ventilating Greenland Sea Deep Water? *J. Phys. Oceanogr.*, 30(1), 215-224.

Send, U., J. Font, G. Krahnmann, C. Millot, M. Rhein and J. Tintoré (1999), Recent advantages on observing the physical oceanography of the Western Mediterranean Sea. *Prog. Oceanogr.*, 44(1-3), 37-64.

Rhein, M., U. Send, B. Klein and G. Krahnmann (1999), Interbasin deep water exchange in the western Mediterranean. *J. Geophys. Res.*, 104(C10), 23495-23508.

Rehder, G., R. S. Keir, E. Suess and M. Rhein (1999), Methane in the northern Atlantic controlled by microbial oxidation and atmospheric history. *Geophys. Res. Lett.*, 26(5), 587-590.

Plähn, O., M. Rhein, R. A. Fine and K. F. Sullivan (1999), Pollutants from the Gulf War serve as water mass tracer in the Arabian Sea. *Geophys. Res. Lett.*, 26(1), 71-74.

Körtzinger, A., M. Rhein and L. Mintrop (1999), Anthropogenic CO₂ and CFCs in the North Atlantic Ocean - A comparison of man-made tracers. *Geophys. Res. Lett.*, 26(14), 2065- 2068.

Rhein, M., O. Plähn, R. Bayer, L. Stramma and M. Arnold (1998), The temporal evolution of the tracer signal in the Deep Western Boundary Current, Tropical Atlantic. *J. Geophys. Res.*, 103(C8), 15869-15883.

Rhein, M., L. Stramma and G. Krahnmann (1998), The spreading of Antarctic Bottom Water in the tropical Atlantic. *Deep-Sea Res. I*, 45(4-5), 507-527.

Plähn, O. and M. Rhein (1998), Measured and modeled CFC distribution of lower North Atlantic Deep Water in the Guiana Basin. *J. Geophys. Res.*, 103(C2), 2831-2847.

Sy, A., M. Rhein, J. R. N. Lazier, K. P. Koltermann, J. Meincke, A. Putzka, and M. Bersch (1997), Surprisingly rapid spreading of newly formed intermediate waters across the North Atlantic Ocean. *Nature*, 386, 675-679.

Rhein, M., L. Stramma and O. Plähn (1997), Tracer signals in the intermediate layer of the Arabian Sea. *Geophys. Res. Lett.*, 24(21), 2561-2564.

Rhein, M. (1996), Convection in the Greenland Sea, 1982-1993. *J. Geophys. Res.*, 101(C8), 18183-18192.

Rhein, M., F. Schott, J. Fischer, U. Send, and L. Stramma (1996), The deep water regime in the Equatorial Atlantic. In G. Wefer, W.H. Berger, G. Siedler, and D. J. Webb, editors, *The South Atlantic: Present and Past Circulation*, pages 261-271. Springer Verlag, Berlin.

Fischer, J., M. Rhein, F. Schott and L. Stramma (1996), Deep water masses and transports in the Vema Fracture Zone. *Deep-Sea Res. I*, 43(7), 1067-1074.

Rhein, M., L. Stramma and U. Send (1995), The Atlantic Deep Western Boundary Current: Water masses and transports near the equator. *J. Geophys. Res.*, 100(C2), 2441- 2457.

Rhein, M. (1995), Deep water formation in the western Mediterranean. *J. Geophys. Res.*, 100(C4), 6943-6959.

Rhein, M. (1994), The Deep Western Boundary Current: tracers and velocities. *Deep-Sea Res.*, 41(2), 263-281.

Rhein, M. and H.-H. Hinrichsen (1993), Modification of Mediterranean water in the Gulf of Cadiz, studied with hydrographic, nutrient and chlorofluoromethane data. *Deep-Sea Res.*, 40(2), 267-291.

Hinrichsen, H.-H., M. Rhein, R. H. Käse and W. Zenk (1993), The Mediterranean water tongue and its chlorofluoromethane signal in the Iberian Basin in early summer 1989. *J. Geophys. Res.*, 98(C5), 8405-8412.

Hinrichsen, H.-H., and M. Rhein (1993), On the origin and the spreading of the shallow Mediterranean water core in the Iberian Basin. *Deep-Sea Res.*, 40(11-12), 2167-2177.

Schlosser, P., G. Bönisch, M. Rhein and R. Bayer (1991), Reduction of Deepwater Formation in the Greenland Sea During the 1980s: Evidence from Tracer Data. *Science*, 251, 1054-1056.

Rhein, M. (1991), Ventilation rates of the Greenland and Norwegian Seas derived from distributions of the chlorofluoromethanes F11 and F12. *Deep-Sea Res.*, 38(4), 485- 503.

Schlosser, P., E. Suess, R. Bayer and M. Rhein (1988), ³He in the Bransfield Strait waters: indications for local injection from back-arc rifting. *Deep-Sea Res.*, 35(12), 1919-1935.

Rhein, M., L. Heng Chan, W. Roether and P. Schlosser (1987), ²²⁶Ra and Ba in Northeast Atlantic Deep Water. *Deep-Sea Res.*, 34(9), 1541-1564.

Kromer, B., M. Rhein, M. Bruns, H. Schoch-Fischer and K. O. Münnich (1986), Radiocarbon Calibration Data for the 6th to the 8th Millenia BC. *RADIOCARBON*, 28(2B), 954-960.

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Schlosser, P., M. Rhein, W. Roether and B. Kromer (1984), High-precision measurements of oceanic ^{226}Ra . *Marine Chemistry*, 15, 203-216.