

Curriculum vitae

Name

Prof. Dr. Martin Visbeck



Employer

GEOMAR Helmholtz Centre for Ocean Research Kiel and
Kiel University
Düsternbrooker Weg 20, 24105 Kiel, Germany

Degrees

1989 Diploma in physical oceanography, Kiel University, Germany
1993 PhD in physical oceanography, Kiel University, Germany

History of employment

1989-1993 PhD student, Kiel University, Germany; Prof. F. Schott
1994-1995 Postdoctoral fellow at MIT; Prof. J. Marshall
1995-2004 Associate Research Scientist, Lamont-Doherty Earth Observatory
1999-2004 Associate Professor, Department of Earth and Environmental Sciences,
Columbia University, New York
since 2004 Adjunct Senior Research Scientist Lamont-Doherty Earth Observatory
since 2004 Professor at Kiel University and head of the research unit
„Physical Oceanography“ at GEOMAR Helmholtz Centre for Ocean
Research Kiel (before 2012 IFM-GEOMAR)

Other positions of responsibility

2007-2011 Deputy Director, Leibniz-Institute for Marine Science, Kiel, Germany

International extended visits

1998-1999 four months at CSIRO Hobart, Australia
2008 two months at Ocean University China, Qingdao, China
2008-2009 three months at Atlantic Oceanographic & Meteorological Laboratory
(NOAA) and Rosenstiel School of Marine & Atmospheric Science (University
of Miami), USA

Awards and Honors

- 1993 NOAA Global and Climate Change Postdoctoral Fellowship
- 1997 Storke-Doherty Lecturer sponsored by LDEO/Columbia University
- 2008 Guest Professor, Ocean University of China, Qingdao, China
- 2015 Member of the European Academy of Sciences (EURASC)
- 2015 AGU (American Geophysical Union) Fellow
- 2019 President TOS (The Oceanography Society) and Fellow
- 2019 Henry Stommel Medal (AMS) and AMS (American Meteorological Society) Fellow

Memberships

- American Geophysical Union
- American Meteorological Society
- The Oceanography Society
- European Geosciences Union

Research experience

Prof. Visbeck's research is concerned with ocean and climate variability and change and ocean sustainability. He has investigated the interactive role of mesoscale eddies and convective plumes in deep water formation sites as well as the production mechanisms associated with shelf convection. He has explored the oceans response to NAO and SAM atmospheric forcing. A recent regional emphasis is the circulation of the Atlantic. Where his group maintains the world's longest direct current measurement series to document the variability of North Atlantic Deep Water transport in the Labrador Sea, a key component of the Atlantic Overturning Circulation. In the context of a Kiel based collaborative research centers on climate-biogeochemical interactions in the tropical ocean his work focuses on the supply of oxygen towards the extensive tropical oxygen minimum zones by diapycnal mixing and lateral eddy transfer. In his research on observations of ocean circulation and mixing he makes use of research vessel based expeditions but also is increasingly using and advancing modern robotic platforms including profiling floats and gliders, and the development of ocean observatories for long-term observations in the water column. He is spearheading new approaches to bring all ocean data and information together in form of a digital-twin of the ocean making use of innovative informatics and data science. Furthermore, he supports conceptual frameworks to advance integrated marine research in the context of ocean sustainable development at the regional and international level. He has contributed to ocean literacy projects and capacity building in Africa. His advice is sought by science bodies and governments in Germany, the EU and at the UN level. For example, he is active in the leadership council of the Sustainable Development Solutions Network (SDSN) and the Executive Planning Group for the UN "Ocean Science Decade for Sustainable Development 2021-2030".

Service to the community through committee work, advisory boards (selected)

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|--------------|---|
| since 2012 | Member of the leadership council of the UN-SDSN network |
| since 2014 | Member of the World Climate Research Programs Joint Scientific Committee (WCRP-JSC) |
| since 2017 | Member of the Ocean Knowledge Action Network (KAN) development team sponsored by FutureEarth, WCRP, SCOR and IOC/UNESCO |
| since 2018 | Member of the Governing Board of the International Science Council (ISC) |
| since 2018 | Member of the Executive Planning Group for the UN Decade of Ocean Science for Sustainable Development (2021-2030) |
| since 2020 | Member of the Research Board of the World Meteorological Organization (WMO) |
| <i>past:</i> | |
| 2008-2009 | Chair of the expert segment of the World Meteorological Organization's Third World Climate Conference in 2009 |
| 2010-2016 | Member, AGU (American Geophysical Union) Ocean Sciences Section Executive Committee |
| 2011 & 2015 | Member and Chair, ESA (European Space Agency) EOEP (Earth Observation Envelope Programme) Scientific Review Panel |
| 2011-2013 | Member, ICSU Transition Team, the interim governing body of the new global sustainability initiative "Future Earth" |
| 2012-2018 | Member of ICSU Committee on Scientific Planning and Review (CSPR) |
| 2013-2018 | Chair of the German Committee Future Earth sponsored by the German Research Foundation (DFG) |

- 2017-2019 Co-Chair of the German Science Platform Sustainability 2030 (BMBF)
- 2018-2020 Chair of European Space Agency (ESA) Advisory Committee for Earth Observations (ACEO)
- 2007-2013 Member and Co-chair, WCRP-CLIVAR (World Climate Research Programme, Climate and Ocean: Variability, Predictability and Change) Scientific Steering Group
- 2005-2009 Member, GEO (Group on Earth Observations) Science and Technology Committee
- 2004-2005 Member, WCRP-COPES (World Climate Research Programme, Coordinated Observation and Prediction of the Earth System) Task Force
- 2000-2006 Chair, WCRP-CLIVAR Atlantic Sector Implementation Panel

Institutional / program advisory boards

- since 2015 Science Advisory Board Member, DWD (Offenbach, Germany)
- since 2016 Scientific and Technological Advisory Committee, Copernicus Marine Environmental Monitoring Service (CMEMS, France)
- since 2017 Advisory Board Member Earth Observations, DLR (Bonn, Germany)
- since 2017 Chair MARE:N Advisory Board (BMBF Germany)
- since 2018 Advisory Committee Centre for Southern Hemisphere Oceans Research (CSHOR), CSIRO (Hobart, Australia)
- since 2019 Chair of the Scientific Advisory Board Leibniz Centre for Tropical Marine Research (ZMT, Bremen, Germany)

past:

- 1999-2019 Member, Climate Observing System Council (NOAA-OGP, USA)
- 2014-2017 Advisory Board Member, UK Met Office Hadley Centre (MOHC, UK)
- 2007-2014 Member, Senate Commission on Oceanography (DFG, Germany)
- 2009-2012 Deputy Speaker, German National Committee on Global Change Research (NKGCF, Germany)
- 2008-2012 Elected member, Review Board for Atmospheric Science and Oceanography (DFG, Germany)
- 2008-2009 Member, Science and Innovation Strategic Board (NERC, UK)
- 2005-2010 Steering Group Member, RAPID: Rapid Climate Change Programme (NERC, UK)
- 1998-2004 Member, Global and Climate Change Advisory Panel (NOAA-OGP, USA)
- 1999-2004 Co-chair, US-CLIVAR Atlantic Sector Implementation Panel

Leadership of major science projects in Kiel

- 2007-2019 Speaker of the Kiel based Cluster of Excellence "Future Ocean" (6M€ / year)
- 2015-2019 Lead-PI of EU Horizon2020 "AtlantOS" project (63 partners, 21M€ over 4 years)

Oceanographic Expeditions (last 10 years)

- 29.10.2019 – 21.11.2019 Chief Scientist, *METEOR M159*, Tropical Atlantic (Recife - Cape Verde)
- 01.03.2017 – 08.04.2017 Chief Scientist, *METEOR M135*, South Pacific (Valparaiso - Callao)
- 12.12.2016 – 02.01.2017 Chief Scientist, *METEOR M133*, South Atlantic (Cape Town – Falkland Islands)
- 01.05.2015 – 03.06.2015 Chief Scientist, *METEOR M116/1*, Tropical Atlantic (Guadeloupe – Cape Verde)
- 17.03.2014 – 16.04.2014 Chief Scientist, *METEOR M105*, Tropical Atlantic (Cape Verde – Cape Verde)
- 04.10.2013 – 21.10.2013 Chief Scientist, *METEOR M100/2*, German-African Training, (Namibia – Mauritius)
- 26.11.2012 – 20.12.2012 Chief Scientist, *Maria S. Merian MSM23*, Tropical Atlantic (Mindelo – Walfis Bay)
- 23.09.2011 – 30.09.2011 Chief Scientist, *Maria S. Merian MSM19/1a*, Training and Capacity Building Cruise (Namibia – Namibia)
- 17.10.2010 – 13.11.2010 Chief Scientist, *METEOR M83/1*, Tropical Atlantic (Las Palmas – Cape Verde)
- 26.11.2009 – 22.12.2009 Chief Scientist, *METEOR M80/2*, Tropical Atlantic (Cape Verde – Senegal)
- 01.11.2008 – 06.12.2008 Chief Scientist, *Maria S. Merian MSM10/1*, Tropical Atlantic (Ponta Delgada – Cape Verde)
- 18.04.2008 – 03.05.2008 Chief Scientist, *Maria S. Merian MSM08/1*, Tropical Atlantic (Cape Verde – Cape Verde)

Teaching (partial)

- since 2016 Ocean Sustainability M.Sc. level, University of Kiel (CAU)
- since 2015 Regional Climate Variability (500018 MNF-klim-302, M.Sc. level), University of Kiel (CAU)
- since 2015 Regional Oceanography (500066 MNF-ozgr-201a, w/ J. Karstensen), B.Sc. level, University of Kiel (CAU)
- 2009-2015 Messmethoden der Ozeanographie (500051 MNF-Pher-110b), B.SC level, University of Kiel (CAU)
- 2007-2019 Introduction to Physical Oceanography (500015 MNF-klim-101), B.Sc. level, University of Kiel (CAU)

Teaching at summer schools:

- 2017, 10.07 – 14.07 (*Co-organizer*) WE Heraeus Summerschool "Physics of the Ocean", Bad Honnef, Germany
- 2014, 01.12 – 08.12 The Nansen Tutu Summer School on Ocean Climate and Marine Ecosystem: A focus on the Agulhas Current, the Benguela upwelling system and the Tropical Atlantic, Cape Town, South Africa
- 2014, 07.09 – 12.09 (*Co-organizer*) DPG Physics School on Physics of the Ocean, Bad Honnef, Germany
- 2012, 16.09 – 24.09 International Summer School for Students: Climate Change in the Marine Realm, University of Bremen, Germany
- 2012, 30.07 – 10.08 European Space Agency Earth Observation (ESA EO) Summer School on Earth System Monitoring and Modelling
- 2011, 11.09 – 16.09 (*Co-organizer*) DPG Physics School on Physics of the Ocean, Bad Honnef, Germany
- 2010, 11.07 – 15.07 (*Co-organizer*) 9th Summer Institute, NOAA Climate and Global Change Postdoctoral Fellowship Program, Colorado, USA
- 2006, 11.09 – 22.09 Bjerkness Summer School in Climate Change "Multidecadal Climate Variability and Teleconnection Dynamics", Finse, Norway
- 2006, 14.08 – 26.08 Summer School "Climate Changes Impact on Marine Ecosystems", Ankara, Turkey

List of Ph.D. Students

current: Carola Trahms (since 2019)

past: Madeleine Freund (2020), Patricia Handmann (2019), Jonathan V. Durgadoo (2013 w/ A. Biastoch as primary supervisor), Donata Banyte (2013), Matthias Lankhorst (2007, w/ U. Send as primary supervisor), Maja Zuvella-Aloise (2005, w/ R. Käse as primary supervisor), Andreas Macrander (2004, w/ R. Käse as primary supervisor), Torsten Kanzow (2004, w/ U. Send as primary supervisor), Samar P. Khatiwala (2000)

Invited presentations (selected):

- 2020 ESA Phi-Week “*Digital Twins of the Ocean - Opportunities to Connect Science to Society*”, on-line
- 2020 Alpbach Forum Plenary Session “Climate and Environment – European Perspectives”, Alpbach, Austria
- 2020 Partnership for Observation of the Global Ocean (POGO) meeting: “(Ocean) Sustainability, Innovation and Partnership”, Qingdao, China
- 2019 20th UN Open-ended Informal Consultative Process on Oceans & Law of the Sea, “*Sustained global ocean observing systems serving operational service, science and sustainable development*”, UN-DOALOS, New York
- 2018 Villa-Vigoni Tage des Wissenschaftsmanagement, „*Nachhaltigkeitsforschung - Neue Herausforderungen der Wissenschaftskooperation in Deutschland, (Europa) und Global*“, Menaggio, Italien
- 2018 From COP21 towards the United Nations Decade of Ocean Science for Sustainable Development (2021-2030), “What does science tell us today About the ocean?”, UNECSO, Paris
- 2017 Daimler und Benz Stiftung „*Mensch und Meer – Die Zukunft des Ozeans*“, Berlin
- 2017 Heidelberger Akademievorlesung, „*Wieviel Mensch verträgt der Ozean? – Wieviel Ozean braucht der Mensch?*“, Heidelberg
- 2016 Third World Heritage Marine Managers Conference, “*Climate change and the ocean - What to expect in the next decade?*”, Galapagos
- 2016 Geographische Gesellschaft Würzburg, „*Die Ozeane der Zukunft, zu warm, zu hoch, zu sauer*“
- 2016 UK Challenger Society Assembly, “*Observing and Understanding Ocean Circulation and Mixing - Two tales from the Tropical and Subpolar North Atlantic: Tropical Oxygen Minimum Zones and the Thermohaline Overturning Circulation*”, Liverpool, UK
- 2015 Institute for Sustainable Development and International Relations, Paris “*Sustaining ocean observation. Conference on “Implementing the Ocean SDG: from knowledge to action*”, (IDDRI), Paris
- 2015 Conference on The Atlantic – our Shared Resource: making the vision reality, “*Optimizing and Enhancing the Integrated Atlantic Ocean Observing System*” (AtlantOS), Brussels
- 2014 Global Ocean Summit: Marine Science, Technology and Sustainable Development, “*Ocean Sustainability – Opportunities for Integrative Ocean Research and Sustained Ocean Observations*”, Qingdao, China
- 2014 Inaugural Nordenskjöld Lecture, University of Gothenburg, “*Mankind and the Sea: Our Common Future Ocean*”. Gothenburg, Sweden
- 2013 European Maritime Day Conference, *Ocean observation - future potential and limits today*, Bremen
- 2013 Arctic Observing Summit, *Sustained (Ocean) Observations in the Context of Global Sustainability*, Vancouver, Canada
- 2012 Conference Series Sustainable Oceans: Reconciling Economic Use and Protection - Conference No. 2 ‘*Developing a New International Architecture for Maritime Policy*’, UN-New York, USA
- 2010 Schott Lecture at the Rosenstiel School of Marine and Atmospheric Science “*De-Oxygenation in the Tropical North Atlantic. What does the Future Hold?*”, Miami, USA
- 2008 SCOR 50th Anniversary Symposium: „*The Changing Ocean – From Past to Future*”, Woods Hole, USA

International conferences organized (selected):

- 2000 AGU Chapman Conference, *The North Atlantic Oscillation*, Orense, co-convener, 150 attendees
- 2009 *World Climate Conference-3 (WCC-3)* WMO-Geneva, chair of the scientific segment, 1000 attendees
- 2009 *OceanObs09*, Florence, member of the organizing committee, 600 attendees
- 2011 *WCRP Open Science Conference*, Denver, member of the organizing committee, 800 attendees
- 2014/16/18 *German Future Earth Summits*, Berlin, convener, 250 attendees per meeting
- 2015 *Measuring Sustainable Development*, UN-New York, co-convener, 80 attendees
- 2016 *Workshop on the Development of an Integrated Ocean Research Network*, Kiel, convener, 100 attendees
- 2016 *Science needs in the context of tough choices in implementing the new SDG framework*, convener, Villa Vigoni, Mennagio, 50 attendees
- 2017 *Advances in Integrated Ocean Research towards Sustainable Development*, convener, Kiel, 100 attendees
- 2018 *3ClustersConference Ocean - Climate - Sustainability Research Frontiers*, Berlin, co-convener, 150 attendees
- 2019 *First International AtlantOS Symposium*, UNESCO-Paris, convener, 120 attendees
- 2019 *OceanObs09*, co-chair of the sponsor committee, 1300 attendees

Publications

Martin Visbeck has 125 publications with a total number of 8246 article citations. 28 articles are cited more than 100 times (Scopus) and his ISI H-Index is 49 (Google-Scholar records 18663 citations and an h-index of 65).

ResearcherID: [B-6541-2016](https://orcid.org/0000-0002-0844-834X)

Scopus Author ID: [7004927007](https://orcid.org/0000-0002-0844-834X)

ORCID: <https://orcid.org/0000-0002-0844-834X>

Google Scholar: <https://scholar.google.com/citations?user=prPnETYAAAAJ&hl=en>

Selected Peer-reviewed publications

2020

Pendleton, L., Evans, K. und **Visbeck, M.** (2020) Opinion: We need a global movement to transform ocean science for a better world. PNAS Proceedings of the National Academy of Sciences of the United States of America, 117 (18). pp. 9652-9655. DOI 10.1073/pnas.2005485117.

Claudet, J., Bopp, L., Cheung, W. L., Devillers, R., Escobar-Briones, E., Haugan, P., Heymans, J. J., Masson-Delmotte, V., Matz-Lück, N., Miloslavich, P., Mullineaux, L., **Visbeck, M.**, Watson, R., Zivian, A. M., Ansong, I., Araujo, M., Arico, S., Bailly, D., Barbieri, J., Bamerias, C., Bowler, C., Brun, V., Cazenave, A., Diver, C., Euzen, A., Gaye, A. T., Hilmi, N., Menard, F., Moulin, C., Munoz, N. P., Pamentier, R., Pebayle, A., Pörtner, H. O., Osvaldina, S., Ricard, P., Santos, R. S., Sicre, M. A., Thiebault, S., Thiele, T., Trouble, R., Turra, A., Uku, J. und Gaill, F. (2020) A Roadmap for Using the UN Decade of Ocean Science for Sustainable Development in Support of Science, Policy, and Action. Open Access One Earth, 2 (1). pp. 34-42. DOI 10.1016/j.oneear.2019.10.012.

2019

Ryabinin, V., Barbière, J., Haugan, P., Kullenberg, G., Smith, N., McLean, C., Troisi, A., Fischer, A., Aricò, S., Aarup, T., Pissierssens, P., **Visbeck, M.**, Enevoldsen, H. O. and Rigaud, J. (2019) The UN Decade of Ocean Science for Sustainable Development. Open Access Frontiers in Marine Science, 6 . Art.Nr. 470. DOI 10.3389/fmars.2019.00470.

deYoung, B., **Visbeck, M.**, de Araujo Filho, M. C., Baringer, M. O., Black, C., Buch, E., Canonico, G., Coelho, P., Duha, J. T., Edwards, M., Fischer, A., Fritz, J. S., Ketelhake, S., Muelbert, J. H., Monteiro, P., Nolan, G., O'Rourke, E., Ott, M., Le Traon, P. Y., Pouliquen, S., Sousa-Pinto, I., Tanhua, T., Velho, F. V. and Willis, Z. (2019) An Integrated All-Atlantic Ocean Observing System in 2030. Open Access Frontiers in Marine Science, 6 . Art.Nr. 428. DOI 10.3389/fmars.2019.00428.

Wöfl, A. C., Snaith, H., Amirebrahimi, S., Devey, C. W., Dorschel, B., Ferrini, V., Huvenne, V. A., Jakobsson, M., Jencks, J., Johnston, G., Lamarche, G., Mayer, L., Millar, D., Pedersen, T. H., Picard, K., Reitz, A., Schmitt, T., **Visbeck, M.**, Weatherall, P. and Wigley, R. (2019) Seafloor Mapping – the challenge of a truly global ocean bathymetry. Open Access Frontiers in Marine Science, 6 . Art.Nr. 283. DOI 10.3389/fmars.2019.00283 .

2018

Nilsson, M., Chisholm, E., Griggs, D., Howden-Chapman, P., McCollum, D., Messerli, P., Neumann, B., Stevance, A. S., **Visbeck, M.** and Stafford-Smith, M. (2018) Mapping interactions between the sustainable development goals: lessons learned and ways forward. Open Access Sustainability Science . DOI 10.1007/s11625-018-0604-z.

Handmann, P., Fischer, J., **Visbeck, M.**, Karstensen, J., Biastoch, A., Böning, C. W. und Patara, L. (2018) The Deep Western Boundary Current in the Labrador Sea From Observations and a High-Resolution Model. Journal of Geophysical Research: Oceans. DOI 10.1002/2017JC013702.

Visbeck, M. (2018) Ocean science research is key for a sustainable future. Nature Communications, 9 (1). Art.Nr. 690. DOI 10.1038/s41467-018-03158-3.

2017

Karstensen, J., Schütte, F., Pietri, A., Krahnemann, G., Fiedler, B., Grundle, D., Hauss, H., Körtzinger, A., Löscher, C. R., Testor, P., Vieira, N. and **Visbeck, M.** (2017) Upwelling and isolation in oxygen-

depleted anticyclonic modewater eddies and implications for nitrate cycling. *Biogeosciences (BG)*, 14 (8). pp. 2167-2181. DOI 10.5194/bg-2016-34.

Turney, C. S. M., Fogwill, C. J., Palmer, J. G., van Sebille, E., Thomas, Z., McGlone, M., Richardson, S., Wilmshurst, J. M., Fenwick, P., Zunz, V., Goosse, H., Wilson, K. J., Carter, L., Lipson, M., Jones, R. T., Harsch, M., Clark, G., Marzinelli, E., Rogers, T., Rainsley, E., Ciasto, L., Waterman, S., Thomas, E. R. and **Visbeck, M.** (2017) Tropical forcing of increased Southern Ocean climate variability revealed by a 140-year subantarctic temperature reconstruction. *Climate of the Past*, 13 (3). pp. 231-248. DOI 10.5194/cp-13-231-2017.

Zantopp, R. J., Fischer, J., **Visbeck, M.** and Karstensen, J. (2017) From interannual to decadal: 17 years of boundary current transports at the exit of the Labrador Sea. *Journal of Geophysical Research: Oceans*, 122 (3). pp. 1724-1748. DOI 10.1002/2016JC012271.

Schmidtko, S., Stramma, L. und **Visbeck, M.** (2017) Decline in global oceanic oxygen content during the past five decades. *Nature*, 542 (7641). pp. 335-339. DOI 10.1038/nature21399.

2016

Schütte, F., Karstensen, J., Krahnemann, G., Hauss, H., Fiedler, B., Brandt, P., **Visbeck, M.** und Körtzinger, A. (2016) Characterization of "dead-zone" eddies in the tropical Northeast Atlantic Ocean *Biogeosciences (BG)*, 13 . pp. 5865-5881. DOI 10.5194/bg-13-5865-2016.

Köllner, M., **Visbeck, M.**, Tanhua, T. und Fischer, T. (2016) Diapycnal diffusivity in the core and oxycline of the tropical North Atlantic oxygen minimum zone *Journal of Marine Systems*, 160 . pp. 54-63. DOI 10.1016/j.jmarsys.2016.03.012.

Rickels, W., Dovern, J., Hoffmann, J., Quaas, M. F., Schmidt, J. O. und **Visbeck, M.** (2016) Indicators for Monitoring Sustainable Development Goals: An Application to Oceanic Development in the European Union *Earth's Future*, 4 (5). pp. 252-267. DOI 10.1002/2016EF000353.

Turney, C. S. M., Jones, R. T., Lister, D., Jones, P., Williams, A. N., Hogg, A., Thomas, Z., Compo, G. P., Yin, X., Fogwill, C. J., Palmer, J., Colwell, S., Allan, R. und **Visbeck, M.** (2016) Anomalous mid-Twentieth Century atmospheric circulation change over the South Atlantic compared to the last 6000 years *Environmental Research Letters*, 11 (6). Article Nr. 064009. DOI 10.1088/1748-9326/11/6/064009.

Nilsson, M., Griggs, D. und **Visbeck, M.** (2016) Policy: Map the interactions between Sustainable Development Goals *Nature*, 534 (7607). pp. 320-322. DOI 10.1038/534320a.

Stramma, L., Czeschel, R., Tanhua, T., Brandt, P., **Visbeck, M.** and Giese, B. S. (2016) The flow field of the upper hypoxic Eastern Tropical North Atlantic oxygen minimum zone *Ocean Science*, 12 (5). pp. 2147-2187. DOI 10.5194/os-12-153-2016.

2015

Brandt, P., Bange, H. W., Banyte, D., Dengler, M., Didwischus, S. H., Fischer, T., Greatbatch, R. J., Hahn, J., Kanzow, T., Karstensen, J., Körtzinger, A., Krahnemann, G., Schmidtko, S., Stramma, L., Tanhua, T. and **Visbeck, M.** (2015) On the role of circulation and mixing in the ventilation of oxygen minimum zones with a focus on the eastern tropical North Atlantic, *Biogeosciences (BG)*, 12 . pp. 489-512. DOI 10.5194/bg-12-489-2015.

Fischer, J., Karstensen, J., Zantopp, R. J., **Visbeck, M.**, Biastoch, A., Behrens, E., Böning, C. W., Quadfasel, D., Jochumsen, K., Valdimarsson, H., Jónsson, S., Bacon, S., Holliday, N. P., Dye, S., Rhein, M. and Mertens, C. (2015) Intra-seasonal variability of the DWBC in the western subpolar North Atlantic, *Progress in Oceanography*, 132 . pp. 233-249. DOI 10.1016/j.pocean.2014.04.002.

Lu, Y., Nakicenovic, N., **Visbeck, M.** and Stevance, A. S. (2015) Policy: Five priorities for the UN Sustainable Development Goals – Comment, *Nature*, 520 (7548). pp. 432-433. DOI 10.1038/520432a.

2014

Rickels, W., Quaas, M. and **Visbeck, M.** (2014) How healthy is the human-ocean system? *Environmental Research Letters*, 9 (4). 044013. DOI 10.1088/1748-9326/9/4/044013.

Visbeck, M. (2014) Bumpy path to a warmer world, *Nature Geoscience*, 7 (3). pp. 160-161. DOI 10.1038/ngeo2104.

Visbeck, M., Kronfeld-Goharani, U., Neumann, B., Rickels, W., Schmidt, J., van Doorn, E., Matz-Lück, N., Ott, K. and Quaas, M. (2014) Securing Blue Wealth: The Need for a Special Sustainable

Development Goal for the Ocean and Coasts, Marine Policy, 48 . pp. 184-191. DOI 10.1016/j.marpol.2014.03.005.

2013

Fischer, T., Banyte, D., Brandt, P., Dengler, M., Krahnann, G., Tanhua, T. and **Visbeck, M.** (2013) Diapycnal oxygen supply to the tropical North Atlantic oxygen minimum zone, Biogeosciences (BG), 10 . pp. 5079-5093. DOI 10.5194/bg-10-5079-2013.

2012

Banyte, D., Tanhua, T., **Visbeck, M.**, Wallace, D. W. R., Karstensen, J., Krahnann, G., Schneider, A., Stramma, L. and Dengler, M. (2012) Diapycnal diffusivity at the upper boundary of the tropical North Atlantic oxygen minimum zone, Journal of Geophysical Research - Oceans, 117 (C9). C09016. DOI 10.1029/2011JC007762.

Stramma, L., Prince, E. D., Schmidtko, S., Luo, J., Hoolihan, J. P., **Visbeck, M.**, Wallace, D. W. R., Brandt, P. and Körtzinger, A. (2012) Expansion of oxygen minimum zones may reduce available habitat for tropical pelagic fishes, Nature Climate Change, 2 (1). pp. 33-37. DOI 10.1038/NCLIMATE1304.

Wu, L., Cai, W., Zhang, L., Nakamura, H., Timmermann, A., Joyce, T., McPhaden, M. J., Alexander, M., Qiu, B., **Visbeck, M.**, Chang, P. and Giese, B. (2012) Enhanced warming over the global subtropical western boundary currents, Nature Climate Change, 2 . pp. 161-166. DOI 10.1038/NCLIMATE1353.

2011

Patara, L., **Visbeck, M.**, Masina, S., Krahnann, G. and Vichi, M. (2011) Marine biogeochemical responses to the North Atlantic Oscillation in a coupled climate model, Journal of Geophysical Research, 116 (C7). C07023. DOI 10.1029/2010JC006785.

Wu, L., Jing, Z., Riser, S. and **Visbeck, M.** (2011) Seasonal and spatial variations of Southern Ocean diapycnal mixing from Argo profiling floats, Nature Geoscience, 4 (6). pp. 363-366. DOI 10.1038/ngeo1156.

2010

Brandt, P., Hormann, V., Körtzinger, A., **Visbeck, M.**, Krahnann, G., Stramma, L., Lumpkin, R. and Schmid, C. (2010) Changes in the Ventilation of the Oxygen Minimum Zone of the Tropical North Atlantic, Journal of Physical Oceanography, 40 (8). pp. 1784-1801. DOI 10.1175/2010JPO4301.1.

Fischer, J., **Visbeck, M.**, Zantopp, R. J. and Nunes, N. (2010) Interannual to decadal variability of outflow from the Labrador Sea, Geophysical Research Letters, 37 . L24610. DOI 10.1029/2010GL045321.

Gordon, A. L., Huber, B., McKee, D. and **Visbeck, M.** (2010) A seasonal cycle in the export of bottom water from the Weddell Sea, Nature Geoscience, 3 (8). pp. 551-556. DOI 10.1038/ngeo916.

2009

Stramma, L., **Visbeck, M.**, Brandt, P., Tanhua, T. and Wallace, D. W. R. (2009) Deoxygenation in the oxygen minimum zone of the eastern tropical North Atlantic, Geophysical Research Letters, 36 . DOI 10.1029/2009GL039593.

Visbeck, M. (2009) A Station-Based Southern Annular Mode Index from 1884 to 2005, Journal of Climate, 22 (4). pp. 940-950. DOI 10.1175/2008JCLI2260.1

Books and Book Chapters (selected)

2017

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2013

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The **World Ocean Review** is an extensive report, dealing with the state of the world ocean, the interactions between the ocean and ecological, economical and sociopolitical conditions. It is meant to inform the general public about the current state of the ocean without trying to scare and terrify anyone. The purpose of our publications is to present scientifically robust knowledge in a form accessible to any reader, and thus to serve all those who wish to engage actively and knowledgeably in debate on the issues surrounding marine science. Martin Visbeck and the Kiel Future Ocean Cluster is one of the producers of the WOR series.

WOR 1 - Living with the oceans. A report on the state of the world's oceans (2010)

WOR 2 – The Future of Fish – The Fisheries of the Future (2013)

WOR 3 – Marine Resources – Opportunities and Risks (2014)

WOR 4 – Sustainable Use of Our Oceans – Making Ideas Work (2015)

WOR 5 – Coasts – A Vital Habitat Under Pressure (2017)

OCEAN ATLAS Facts and Figures on the Threats to Our Marine Ecosystems

The Ocean Atlas was produced and published in 2017 by the Cluster of Excellence 'The Future Ocean' in cooperation with the Heinrich-Böll Foundation Schleswig-Holstein/Kiel and the Heinrich-Böll Federal Foundation/Berlin.

The Atlas has 18 double pages and 50 info-graphics showing the relevant facts and figures about the ocean.

The massive open online course (MOOC) "**One Planet – One Ocean: From Science to Solutions**" provides students, practitioners and non-experts with the opportunity to learn from the world's leading scientists on ocean science. The course covers the issues and potential solutions – grounded in rigorous scientific research – to promote preservation, protection and sustainable use of Earth's oceans.

First run in 2016, this MOOC has attracted over 6500 participants from 62 countries. It focusses on building within students a knowledge base that brings to them both the science and wonders of the ocean. Marine natural scientists team with economists, lawyers and philosophers to deliver a holistic view of how the ocean functions, how human interactions with the ocean can be understood, and what solutions are available to support both sustainable use and stewardship of our blue planet. It has been run in 2017 and 2018 in a moderated fashion with discussion fora. Since 2019 it can be studied in self-paced mode on the SDG-Academy's EdX channel.

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