

# **Prof. Dr. Reiner Schlitzer**

## **Alfred Wegener Institute, Bremerhaven**

### **Year of Birth**

1955

### **Scientific Education and Professional Career**

- 1973-1980 Studies of Physics and Mathematics, University of Heidelberg.
- 1980-1985 PhD at Institute of Environmental Physics, University of Heidelberg.
- 1985-1987 Postdoctoral Visiting Scientist, M.I.T., Cambridge, USA.
- 1987-1993 Assistant Professor and Lecturer, University of Bremen.
- 1993 Habilitation, University of Bremen
- 1993-present Senior Scientist, Alfred Wegener Institute, Bremerhaven.
- 2004-present Professor of Environmental Physics, University of Bremen.

### **Webpages**

<http://www.awi.de/ueber-uns/organisation/mitarbeiter/reiner-schlitzer.html>

<https://odv.awi.de>. Ocean Data View software and datasets.

<http://www.ewoce.org/>. *eWOCE* - Electronic Atlas of WOCE Data.

<http://egeotraces.org/>. *eGEOTRACES* - Electronic Atlas of GEOTRACES Sections and Animated 3D Scenes

### **Research Interests**

Modelling of ocean circulation and marine biogeochemical cycles.

Data assimilation and inverse models.

Radioisotopes as paleo-circulation and productivity proxies.

Development of Ocean Data View visualization software.

Creation of electronic atlases.

### **Awards:**

AGU Ocean Sciences Section Award 2010

## Current Service Activities:

GEOTRACES Scientific Steering Committee (co-chair)

Seadatanet Scientific Steering Committee (member)

## Professional Groups:

European Geophysical Union; American Geophysical Union

## Peer-Reviewed Publications

- Orr, J. C., R. G. Najjar, O. Aumont, L. Bopp, J. L. Bullister, G. Danabasoglu, S. C. Doney, J. P. Dunne, J. C. Dutay, H. Graven, S. M. Griffies, J. G. John, F. Joos, I. Levin, K. Lindsay, R. J. Matear, G. A. McKinley, A. Mouchet, A. Oschlies, A. Romanou, **R. Schlitzer**, A. Tagliabue, T. Tanhua, and A. Yool, 2017, Biogeochemical protocols and diagnostics for the CMIP6 Ocean Model Intercomparison Project (OMIP), *Geosci. Model Dev.*, 10(6), 2169-2199, doi:10.5194/gmd-10-2169-2017.
- Arrigo, K. R., M. M. Mills, G. L. van Dijken, K. E. Lowry, R. S. Pickart, and **R. Schlitzer**, 2017, Late Spring Nitrate Distributions Beneath the Ice-Covered Northeastern Chukchi Shelf, *Journal of Geophysical Research: Biogeosciences*, doi:10.1002/2017JG003881.
- Schlitzer, R.**, 2016, Quantifying He fluxes from the mantle using multi-tracer data assimilation, *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 374(2081), doi:10.1098/rsta.2015.0288.
- German, C. R., K. A. Casciotti, J.-C. Dutay, L. E. Heimbürger, W. J. Jenkins, C. I. Measures, R. A. Mills, H. Obata, **R. Schlitzer**, A. Tagliabue, D. R. Turner, and H. Whitby, 2016, Hydrothermal impacts on trace element and isotope ocean biogeochemistry, *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 374(2081), doi:10.1098/rsta.2016.0035.
- Mawji, E., **R. Schlitzer**, E. Masferrer Dodas, et al., 2015: The GEOTRACES Intermediate Data Product 2014, *Mar. Chem.*, 177, Part 1, 1-8, doi: 10.1016/j.marchem.2015.04.005.
- Borrione, I., O. Aumont, M. C. Nielsdóttir, and **R. Schlitzer**, 2014: Sedimentary and atmospheric sources of iron around South Georgia, Southern Ocean: a modelling perspective, *Biogeosciences*, 11(7), 1981-2001, doi:10.5194/bg-11-1981-2014.
- Yao, X. and **Schlitzer, R.**, 2013: Assimilating water column and satellite data for marine export production estimation, *Geoscientific Model Development*, 6 (5), pp. 1575-1590, doi:10.5194/gmd-6-1575-2013.
- Bakker, D. C. E., Pfeil, B., Smith, K., Hankin, S., Olsen, A., Alin, S. R., Cosca, C., Harasawa, S., Kozyr, A., Nojiri, Y., O'Brien, K. M., Schuster, U., Telszewski, M., Tilbrook, B., Wada, C.,

- Akl, J., Barbero, L., Bates, N., Boutin, J., Cai, W. J., Castle, R. D., Chavez, F. P., Chen, L., Chierici, M., Currie, K., de Baar, H. J. W., Evans, W., Feely, R. A., Fransson, A., Gao, Z., Hales, B., Hardman-Mountford, N., Hoppema, M., Huang, W. J., Hunt, C. W., Huss, B., Ichikawa, T., Johannessen, T., Jones, E. M., Jones, S. D., Jutterström, S., Kitidis, V., Körtzinger, A., Landschützer, P., Lauvset, S. K., Lefèvre, N., Manke, A. B., Mathis, J. T., Merlivat, L., Metzl, N., Murata, A., Newberger, T., Ono, T., Park, G. H., Paterson, K., Pierrot, D., Ríos, A. F., Sabine, C. L., Saito, S., Salisbury, J., Sarma, V. V. S. S., **Schlitzer, R.**, Sieger, R., Skjelvan, I., Steinhoff, T., Sullivan, K., Sun, H., Sutton, A. J., Suzuki, T., Sweeney, C., Takahashi, T., Tjiputra, J., Tsurushima, N., van Heuven, S. M. A. C., Vandemark, D., Vlahos, P., Wallace, D. W. R., Wanninkhof, R. and Watson, A. J., 2013: An update to the Surface Ocean CO<sub>2</sub> Atlas (SOCAT version 2), *Earth System Science Data Discussions*, 6 (2), pp. 465-512, doi:10.5194/essdd-6-465-2013.
- Pfeil, B., Olsen, A., Bakker, D., Hankin, S., Koyuk, H., Kozyr, A., Malczyk, J., Manke, A., Metzl, N., Sabine, C., Akl, J., Alin, S., Bates, N., Bellerby, R., Borges, A., Boutin, J., Brown, P., Cai, W. J., Chavez, F., Chen, A., Cosca, C., Fassbender, A., Feely, R., González-Dávila, M., Goyet, C., Hales, B., Hardman-Mountford, N., Heinze, C., Hood, M., Hoppema, M., Hunt, C., Hydes, D., Ishii, M., Johannessen, T., Jones, S. D., Key, R., Körtzinger, A., Landschützer, P., Lauvset, S., Lefèvre, N., Lenton, A., Lourantou, A., Merlivat, L., Midorikawa, T., Mintrop, L., Miyazaki, C., Murata, A., Nakadate, A., Nakano, Y., Nakaoka, S., Nojiri, Y., Omar, A., Padin, X., Park, G. H., Paterson, K., Perez, F., Pierrot, D., Poisson, A., Ríos, A., Santana-Casiano, J. M., Salisbury, J., Sarma, V., **Schlitzer, R.**, Schneider, B., Schuster, U., Sieger, R., Skjelvan, I., Steinhoff, T., Suzuki, T., Takahashi, T., Tedesco, K., Telszewski, M., Thomas, H., Tilbrook, B., Tjiputra, J., Vandemark, D., Veness, T., Wanninkhof, R., Watson, A., Weiss, R., Wong, C. and Yoshikawa-Inoue, H., 2013: A uniform, quality controlled Surface Ocean CO<sub>2</sub> Atlas (SOCAT), *Earth System Science Data*, 5 (1), pp. 125-143, doi:10.5194/essd-5-125-2013.
- Sabine, C., Hankin, S., Koyuk, H., Bakker, D., Pfeil, B., Olsen, A., Metzl, N., Kozyr, A., Fassbender, A., Manke, A., Malczyk, J., Akl, J., Alin, S., Bellerby, R., Borges, A., Boutin, J., Brown, P., Cai, W. J., Chavez, F., Chen, A., Cosca, C., Feely, R., González-Dávila, M., Goyet, C., Hardman-Mountford, N., Heinze, C., Hoppema, M., Hunt, C., Hydes, D., Ishii, M., Johannessen, T., Key, R., Körtzinger, A., Landschützer, P., Lauvset, S., Lefèvre, N., Lenton, A., Lourantou, A., Merlivat, L., Midorikawa, T., Mintrop, L., Miyazaki, C., Murata, A., Nakadate, A., Nakano, Y., Nakaoka, S., Nojiri, Y., Omar, A., Padin, X., Park, G. H., Paterson, K., Perez, F., Pierrot, D., Poisson, A., Ríos, A., Salisbury, J., Santana-Casiano, J., Sarma, V., **Schlitzer, R.**, Schneider, B., Schuster, U., Sieger, R., Skjelvan, I., Steinhoff, T., Suzuki, T., Takahashi, T., Tedesco, K., Telszewski, M., Thomas, H., Tilbrook, B., Vandemark, D., Veness, T., Watson, A., Weiss, R., Wong, C. and Yoshikawa-Inoue, H., 2013: Surface Ocean CO<sub>2</sub> Atlas (SOCAT) gridded data products, *Earth System Science Data*, 5 (1), pp. 145-153, doi:10.5194/essd-5-145-2013.
- Borrione, I. and **Schlitzer, R.**, 2013: Distribution and recurrence of phytoplankton blooms around South Georgia, Southern Ocean, *Biogeosciences*, 10 (1), pp. 217-231, doi:10.5194/bg-10-217-2013.
- Borrione, I., Aumont, O. and **Schlitzer, R.**, 2013: Primary Productivity and Circulation Patterns Downstream of South Georgia: A Southern Ocean Example of the “Island Mass Effect”, Lohmann, G., Grosfeld, K., Wolf-Gladrow, D., Unnithan, V., Notholt, J. and Wegner, A. (editors), In: *Earth System Science: Bridging the Gaps between Disciplines. Perspectives from a*

Multi-disciplinary Helmholtz Graduate Research School, Earth System Science: Bridging the Gaps between Disciplines. Perspectives from a Multi-disciplinary Helmholtz Graduate Research School, Heidelberg, Springer, 4 p., ISBN: 978-3-642-32234-1.

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Gregg, W. W., M. A. M. Friedrichs, A. R. Robinson, K. A. Rose, **R. Schlitzer**, K. R. Thompson, and S. C. Doney, 2009: Skill assessment in ocean biological data assimilation. *Journal of Marine Systems*, **76**, 16-33.

Cao, L., M. Eby, A. Ridgwell, K. Caldeira, D. Archer, A. Ishida, F. Joos, K. Matsumoto, U. Mikolajewicz, A. Mouchet, J. C. Orr, G.-K. Plattner, **R. Schlitzer**, K. Tokos, I. Totterdell, T. Tschumi, Y. Yamanaka, and A. Yool, 2009: The role of ocean transport in the uptake of anthropogenic CO<sub>2</sub>. *Biogeoscience*, **6**, 375-390.

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Duce, R. A., J. LaRoche, K. Altieri, K. R. Arrigo, A. R. Baker, D. G. Capone, S. Cornell, F. Dentener, J. Galloway, R. S. Ganeshram, R. Geider, T. Jickells, M. M. Kuypers, R. Langlois, P. S. Liss, S. M. Liu, J. J. Middelburg, C. M. Moore, S. Nickovic, A. Oschlies, T. Pedersen, J. Prospero, **R. Schlitzer**, S. Seitzinger, L. L. Sorensen, M. Uematsu, O. Ulloa, M. Voss, B. Ward, and L. Zamora, 2008: Impacts of Atmospheric Anthropogenic Nitrogen on the Open Ocean. *Science*, **320**, 893-897.

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**Schlitzer, R.**, 2007: Assimilation of radiocarbon and chlorofluorocarbon data to constrain deep and bottom water transports in the world ocean. *Journal of Physical Oceanography*, **37**(2), 259–276.

Sarmiento, J., J. Simeon, A. Gnanadesikan, N. Gruber, R. Key, and **R. Schlitzer.**, 2007: Deep ocean biogeochemistry of silicic acid and nitrate. *Global Biogeochemical Cycles*, **21**(1), 10.1029/2006GB002720.

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- Schlitzer, R.**, R. Usbeck, and G. Fischer, 2004: Inverse modeling of particulate organic carbon fluxes in the South Atlantic. *The South Atlantic in the Late Quaternary - Reconstruction of Material Budget and Current Systems*, G. Wefer, S. Mulitza, and V. Rathmeyer, Eds., Springer, 1-19.
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