

Akihiko Murata, PhD

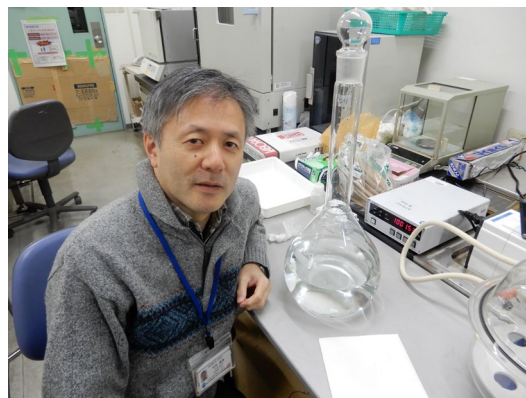
Group Leader of Physical and Chemical Oceanography Research Group,
Research Institute for Global Change (RIGC),
Global Ocean Observation Research Center (GOORC),
Japan Agency for Marine-Earth Science and
Technology Center (JASMTEC)

Address: 2-15 Natsushima-cho, Yokosuka,
237-0061, Japan

Telephone: +81-46-867-9503

Fax: +81-46-867-9835

e-mail: murataa@jamstec.go.jp



Education

Post-graduation: Geoscience

University of Tsukuba, Doctorate of Science

October, 1989

Main Professional Background

Chemical Oceanography

Main Research Interests

Akihiko Murata (AM) received a PhD in Geoscience from University of Tsukuba in 1989. He is now leading Physical and Chemical Oceanography Research Group of RIGC, and is also a member of Arctic Marine Ecosystem Research Unit of Institute of Arctic Climate and Environmental Research (IACE).

AM has continued shipboard observations to detect decadal-scale increases of CO₂ dissolved in the ocean interior, and to assess how much anthropogenic CO₂ emitted into the atmosphere is taken up by the ocean. Over the last decade, AM has served as a chief scientist of some Global Ocean Ship-based Hydrographic Investigation (GO-SHIP; <http://www.go-ship.org/>) cruises conducted by the R/V *Mirai* of JAMSTEC. In these cruises, he took charge of high-quality measurement of CO₂-system properties: dissolved inorganic carbon, total alkalinity, pH and pCO₂. AM

is now conducting measurements of the CO₂-system properties mostly by the R/V *Mirai* in the world oceans to survey progression of ocean acidification. He has recently started research into spatial and temporal variations of biogeochemical cycles in the ocean using Biogeochemical ARGO floats.

He is a member of Section on Carbon and Climate (S-CC) of North Pacific Marine Science Organization (PICES). He also serves as an associate member of Scientific Committee on Oceanic Research (SCOR) Working Group 147 to promote high quality measurement of nutrients in seawater (http://www.scor-int.org/SCOR_WGs_WG147.htm).

Publication list during the last 5 years:

- Gruber, N., D. Clement, B. R. Carter, R. A. Feely, S. van Heuven, M. Hoppema, M. Ishii, R. M. Key, A. Kozyr, S. K. Lauvset, C. Lo Monaco, J. T. Mathis, **A. Murata**, A. Olsen, F. F. Perez, C. L. Sabine, T. Tanhua, and R. Wanninkhof (2019), The oceanic sink for anthropogenic CO₂ from 1994 to 2007. *Science*, 363, 1193–1199.
- Murata, A.**, Y. Kumamoto, and K. Sasaki (2019), Decadal-scale increase of anthropogenic CO₂ in Antarctic Bottom Water in the Indian and western Pacific sectors of the Southern Ocean. *Geophysical Research Letters*, 46, 833–841.
- Yasunaka, S., E. Siswanto, A. Olsen, M. Hoppema, E. Watanabe, A. Fransson, M. Chierici, **A. Murata**, S. K. Lauvset, R. Wanninkhof, T. Takahashi, N. Kosugi, A. M. Omar, S. van Heuven, and T. Mathis (2018), Arctic Ocean CO₂ uptake: an improved multiyear estimate of the air-sea CO₂ flux incorporating chlorophyll a concentrations. *Biogeosciences*, 15, 1643–1661.
- Bakker, D. C. E., B. Pfeil, C. S. Landa, N. Metzl, K. M. O'Brien, A. Olsen, K. Smith, C. Cosca, S. Harasawa, S. D. Jones, S. Nakaoka, Y. Nojiri, U. Schuster, T. Steinhoff, C. Sweeney, T. Takahashi, B. Tilbrook, C. Wada, R. Wanninkhof, S. R. Alin, C. F. Balestrini, L. Barbero, N. R. Bates, A. A. Bianchi, F. Bonou, J. Boutin, Y. Bozec, E. F. Burger, W. J. Cai, R. D., Castle, L. Q. Chen, M. Chierici, K. Currie, W. Evans, C. Featherstone, R. A. Feely, A. Fransson, C. Goyet, N. Greenwood, L. Gregor, S. Hankin, N. J. Hardman-Mountford, J. Harlay, J. Hauck, M. Hoppema, M. P. Humphreys, C. Hunt, B. Huss, J. S. P. Ibanhez, T. Johannessen, R. Keeling, V. Kitidis, A. Kortzinger, A. Kozyr, E. Krasakopoulou, A. Kuwata, P. Landschutzer, S. K. Lauvset, N. Lefevre, C. Lo Monaco, A. Manke, J. T. Mathis, L. Merlivat, F. J. Millero, P. M. S. Monteiro, D. R. Munro, **A. Murata**, T. Newberger, A. M. Omar, T. Ono, K. Paterson, D. Pearce, D. Peirrot, L. L. Robbins, S. Saito, J. Salisbury, R. Schlitzer, B. Schneider, R. Schweitzer, R. Sieger, I. Skjelvan, K. F. Sullivan, S. C. Sutherland, A. J. Sutton, K. Tadokoro, M. Telszewski, M. Tuma, S. M. A. C. van Heuven, D. Vandemark, B. Ward, A. J. Watson, S. Q. Xu (2016), A multi-decade record of high-quality *f*CO₂ data in version 3 of the Surface Ocean CO₂ Atlas (SOCAT). *Earth System*

Science Data, 8, 383–413.

- Yasunaka, S., **A. Murata**, E. Watanabe, M. Chierici, A. Fransson, S. V. Heuven, M. Hoppema, M. Ishii, T. Johannessen, N. Kosugi, S. K. Lauvset, J. T. Mathis, S. Nishino, A. M. Omar, A. Olsen, D. Sasano, T. Takahashi, and R. Wanninkhof (2016), Mapping of the air–sea CO₂ flux in the Arctic Ocean and its adjacent seas: Basin-wide distribution and seasonal to interannual variability. *Polar Science*, 10, 323–334.
- Kumamoto, Y., M. Aoyama, Y. Hamajima, S. Nishino, **A. Murata**, and T. Kikuchi (2015), Meridional distribution of Fukushima-derived radiocesium in surface seawater along a trans-Pacific line from the Arctic to Antarctic Oceans in summer 2012. *Journal of Radioanalytical Nuclear Chemistry*, DOI:10.1007/s10967-015-4439-0.
- Doi, T., S. Osafune, N. Sugiura, S. Kouketsu, **A. Murata**, S. Masuda, and T. Toyada (2015), Multi-decadal change in the dissolved inorganic carbon in a long-term ocean state estimation. *Journal of Advances in Modeling Earth System*, 7, 1885–1900.
- Murata, A.**, K. Hayashi, Y. Kumamoto, and K. Sasaki (2015), Detecting the progression of ocean acidification from the saturation state of CaCO₃ in the subtropical South Pacific. *Global Biogeochemical Cycles*, 29, 463–475.
- Le Quere, C., R. Moriarty, R. M. Andrew, J. G. Canadell, S. Sitch, J. I. Korsbakken, P. Friedlingstein, G. P. Peters, R. J. Andres, T. A. Boden, R. A. Houghton, J. I. House, R. F. Keeling, P. Tans, A. Arneeth, D. C. E. Bakker, L. Barbero, L. Bopp, J. Chang, F. Chevallier, L. P. Chini, P. Ciais, M. Fader, R. A. Feely, T. Gkritzalis, I. Harris, J. Hauck, T. Ilyina, A. K. Jain, E. Kato, V. Kitidis, K. K. Goldewijk, C. Koven, P. Landschuetzer, S. K. Lauvset, Lefevre, N. Lefevre, A. Lenton, I. D. Lima, N. Metzl, F. Millero, D. R. Nunro, **A. Murata**, J. E. M. S. Nabel, S. Nakaoka, Y. Nojiri, K. O'Brien, A. Olsen, T. Ono, F. F. Perez, B. Pfeil, D. Pierrot, B. Poulter, G. Rehder, C. Rodenbeck, S. Saito, U. Schuster, J. Schwinger, R. Seferian, T. Steinhoff, B. D. Stocker, A. J. Sutton, T. Takahashi, B. Tilbrook, I. T. van der Laan-Luijkx, G. R. van der Werf, S. van Heuven, D. Vandemark, N. Viovy, A. Wiltshire, S. Zaehle, N. Zeng (2015), Global carbon budget 2014. *Earth System Science Data*, 7, 47–85, doi:10.5194/essd-7-47-2015.
- Kouketsu, K. and **A. M. Murata** (2014), Detecting decadal scale increases in anthropogenic CO₂ in the ocean. *Geophysical Research Letters*, 41, 4594–4600.
- Kumamoto, Y., M. Aoyama, Y. Hamajima, T. Aono, S. Kouketsu, **A. Murata**, and T. Kawano (2014), Southward spreading of the Fukushima-derived radiocesium across the Kuroshio Extension of the North Pacific. *Scientific Reports*, 4, doi:10.1038/srep04726.
- Kumamoto, Y. M. Aoyama, Y. Hamajima, **A. Murata**, and T. Kawano (2014), Impact of Fukushima-derived radiocesium in the western North Pacific Ocean about ten months after the Fukushima Dai-ichi nuclear power plant accident. *Journal of Environmental Radioactivity*, 140, 114–122.