

MARIKO HATTA, Ph.D.

Affiliate Graduate Faculty, Department of Oceanography, University of Hawaii

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US Permanent Resident; [Google Scholar](#); [Research Gate](#)

EDUCATION

B.S. Environmental Biology and Chemistry 2001

University of Toyama, Department of Science, Japan.

Advisor: Issei Kasahara. *Thesis title: Phosphate distribution and marine pollution in Toyama Bay.*

M.S. Environmental Biology and Chemistry 2003

University of Toyama, Department of Graduate School of Science and Engineering, Japan.

Advisor: Jing Zhang. *Thesis title: Characterization of water masses using dissolved oxygen and the rare earth elements.*

Ph.D. Life and Environmental Sciences 2006

University of Toyama, Department of Graduate School of Science and Engineering, Japan.

Advisor: Jing Zhang. *Thesis title: Deep water circulation in the Sea of Japan: characterization of water masses using dissolved oxygen and rare earth elements.*

PROFESSIONAL APPOINTMENTS & RESEARCH EXPERIENCE

2000-2001 Teaching Assistant, University of Toyama, Japan.

- Evaluating the phosphate analytical method and applying it to environmental samples to understand aquatic pollution of the rivers flowing into Toyama Bay.
- Facilitated sampling/analysis of phosphate during monthly research cruises in Toyama Bay.

2001-2006 MS Thesis Research & Graduate Research Assistant, University of Toyama, Japan.

- Characterized water masses using trace metals and other parameters in Toyama Bay, the Sea of Japan and the East China Sea.
- Facilitated sampling/analysis of trace elements during various research cruises.
- Wrote successful proposal SASAKAWA SCIENTIFIC RESEARCH GRANT ([17-327M](#)).
- Awarded [the best student poster](#) during the 2005 the Oceanography Society's International Ocean Research Conference in Paris, France.
- Obtained two fellowships for attending the international science meetings.

2006-2019 Oceanographic Postdoctoral Researcher, Research Corporation of the University of Hawaii, USA.

- Investigated the cause of the development of high productivity near the Antarctic Peninsula using distributions of dissolved Al, Fe, and Mn.
- Developed analytical methodology for microwave digestion of aerosol samples and used flow injection methods to determine dissolved Al. Participated in the GEOTRACES inter-calibration of dissolved Al from aerosol sample digestions.
- Facilitated sampling/analysis of trace elements during 8 research cruises.

- Participated in the GEOTRACES inter-calibration of equipment for obtaining trace metal clean seawater samples and the determinations of dissolved Al and Fe.

2014-2017 Research Affiliate, University of Hawaii, USA.

- Produced a basin-scale picture of the distributions of dissolved Fe and Al in the North Atlantic Ocean during the US GEOTRACES North Atlantic NAZT cruise.
- Investigated the causes of high productivity in the Ross Sea by shipboard determinations of dissolved Al, Fe, and Mn.
- Facilitated sampling/analysis of trace elements during the CLIVAR A16S and the GEOTRACES Arctic cruises.
- Co-wrote a successful NSF-OCE proposal ([OCE-1439253](#) as Co-PI).

2017-Present Affiliate Graduate Faculty, University of Hawaii, USA.

- Developed a programmable flow injection method using Lab-on-Valve for dissolved Fe (II) and phosphate analysis in freshwater and seawater.
- Invited participant in the Australian led international nutrient intercalibration cruise, performing shipboard phosphate determinations.
- Wrote two successful NSF-OCE proposals ([OCE-1634463](#) as co-PI, [OCE-1736906](#) as PI).
- Assisted and advised undergraduate and graduate students with their research projects and written dissertations/theses. Serving on the advisory committees of two graduate students.

2019 - Present Oceanographic Researcher, Research Corporation of the University of Hawaii, USA.

- Wrote a successful NSF-OCE proposals ([OCE-192490](#) as PI).

Professional Societies

The Geochemical Society of Japan

The Oceanography Society (TOS)

PUBLICATIONS***Refereed*****2005**

Hatta, M., Zhang, J., Satake, H., Ishizaka, J. and Nakaguchi, Y. (2005). Water mass structure and fresh water fluxes (Riverine and SGD's) into Toyama Bay (in Japanese). *Geochemistry*, 39, 157-164. [doi:10.14934/chikyukagaku.39.157](https://doi.org/10.14934/chikyukagaku.39.157).

2006

HATTA, M. (2006). Deep water circulation in the Sea of Japan: characterization of water mass using dissolved oxygen and rare earth elements. (dissertation, in Japanese). [UT51-2007-N842](#).

Hatta, M. and Zhang, J. (2006). Possible source of advected water mass and residence times in the multi-structured Sea of Japan using rare earth elements. *Geophysical Research Letters*, 33 (16), L16606. [doi: 10.1029/2006GL026537](https://doi.org/10.1029/2006GL026537).

2012

Measures, C.I., **Hatta, M.**, Grand, M. (2012). Bioactive trace metal distributions and biogeochemical controls in the Southern Ocean, *Oceanography*, 25 (3): 122-133. [doi: 10.5670/oceanog.2012.85](https://doi.org/10.5670/oceanog.2012.85).

2013

Hatta, M. and Zhang, J. (2013). Temporal changes and impacts of Submarine Fresh Groundwater Discharge to the coastal environment: a decadal case study in Toyama Bay, Japan. *JGR. Ocean*. 118. 1-13. [doi:10.1002/jgrc.20184](https://doi.org/10.1002/jgrc.20184).

Morton, P.L., Landing, W.M., Hsu, S-C., Milne, A., Aguilar-Islas, A.M., Baker, A.R., Buck, C.S., Gao, Y., Gichuki, S., Hastings, M., **Hatta, M.**, Johansen, A.M., Losno, R., Mead, C., Patey, M., Swarr, G., van der Merwe, P., Vandermark, A., Zamora, L.M. (2013). Results from the 2008 GEOTRACES aerosol intercalibration study, *Limnology and Oceanography: Methods*. 11, 62-78. [doi: 10.4319/lom.2013.11.62](https://doi.org/10.4319/lom.2013.11.62).

Hopkinson, B., Seegers, B., **Hatta, M.**, Measures, C.I., Mitchell, G.B., Barbeau, K. (2013). Planktonic C:Fe ratios and carrying capacity in the southern Drake Passage, *Deep-Sea Res. II*. 90. 102-111. [doi: 10.1016/j.dsr2.2012.09.001](https://doi.org/10.1016/j.dsr2.2012.09.001).

Hatta, M., Measures, C.I., Selph, K.E., Zhou, M., Hiscock, W.T. (2013). Iron fluxes from the shelf regions near the South Shetland Islands in the Drake Passage during the austral-winter 2006, *Deep-Sea Res. II*. 90. 89-101. [doi: 10.1016/j.dsr2.2012.11.003](https://doi.org/10.1016/j.dsr2.2012.11.003).

Measures, C.I., Brown, M.T., Selph, K.E., Apprill, A., Zhou, **M.**, **Hatta, M.**, Hiscock, W.T. (2013). The Influence of Shelf Processes in Delivering Dissolved Iron to the HNLC waters of the Drake Passage, Antarctica, *Deep-Sea Res. II*. 90. 77-88. [doi: 10.1016/j.dsr2.2012.11.004](https://doi.org/10.1016/j.dsr2.2012.11.004).

Frants, M., Gille, S.T., **Hatta, M.**, Hiscock, W.T., Kahru, M., Measures, C.I., Mitchell, B.G., Zhou, M. (2013). Analysis of horizontal and vertical processes contributing to natural iron supply in the mixed layer in southern Drake Passage. *Deep-Sea Res. II*. 90. 68-76. [doi: 10.1016/j.dsr2.2012.06.001](https://doi.org/10.1016/j.dsr2.2012.06.001).

Selph, K., Apprill, A., Measures, C.I., **Hatta, M.**, Hiscock, W.T. and Brown, M.T. (2013). Phytoplankton distributions in the Shackleton Fracture Zone/Elephant Island Region of the Drake Passage in February-March 2004, *Deep-Sea Res. II*. 90. 55-67. [doi: 10.1016/j.dsr2.2013.01.030](https://doi.org/10.1016/j.dsr2.2013.01.030).

Zhou, M., Zhu, Y., Measures, C.I., **Hatta, M.**, Charette, M.A., Gille, S.T., Frants, M., Jiang, M., and Mitchell, B.G. (2013). Winter mesoscale circulation on the shelf slope region of the southern Drake Passage. *Deep-Sea Res. II*. 90. 4-14. [doi: 10.1016/j.dsr2.2013.03.041](https://doi.org/10.1016/j.dsr2.2013.03.041).

2014

Kustka, A., Jones, B.M., **Hatta, M.** (2014). The influence of iron and siderophores on eukaryotic phytoplankton growth rates and community composition in the Ross Sea, Marine Chemistry. [doi: 10.1016/j.marchem.2014.12.002](https://doi.org/10.1016/j.marchem.2014.12.002).

Grand, M.M., Buck, C.S., Landing, W.M., Measures, C.I., **Hatta, M.**, Hiscock, W.T., Brown, M., Resing, J.A. (2014). Quantifying the Impact of Atmospheric Deposition on the Biogeochemistry of Fe and

Al in the Upper Ocean: A Decade of Collaboration with the US CLIVAR-CO₂ Repeat Hydrography Program. *Oceanography* 27(1):62–65. doi: [10.5670/oceanog.2014.08](https://doi.org/10.5670/oceanog.2014.08).

2015

The GEOTRACES Group, The GEOTRACES Intermediate Data Product 2014. (2015). *Marine Chemistry* 177.1-8. doi: [10.1016/j.marchem.2015.04.005](https://doi.org/10.1016/j.marchem.2015.04.005).

Grand M.M., Measures, C.I., **Hatta, M.**, Morton, P.L., Barrett, P., Milne, A., Resing, J.A., Landing, W.M. (2015). The impact of circulation and dust deposition in controlling the distributions of dissolved Fe and Al in the south Indian subtropical gyre, *Marine Chemistry* 176, 110-125. doi:[10.1016/j.marchem.2015.08.002](https://doi.org/10.1016/j.marchem.2015.08.002).

Grand, M.M., Measures, C.I., **Hatta, M.**, Hiscock, W.T., Back, C.S., Landing, W.M. (2015). Dust deposition in the eastern Indian Ocean: the ocean perspective from Antarctica to the Bay of Bengal, *Global Biogeochemical Cycles*, doi: [10.1002/2014GB004898](https://doi.org/10.1002/2014GB004898).

Grand, M.M., Measures, C.I., **Hatta, M.**, Hiscock, W.T., Landing, W.M., Morton, P.L., Buck, C.S., Barret, P.M., and Resing, J.A. (2015). Dissolved Fe and Al in the upper 1000m of the eastern Indian Ocean: high-resolution data from the Antarctic margin to the Bay of Bengal. *Global Biogeochemical Cycles*, 29, doi:[10.1002/2014GB004920](https://doi.org/10.1002/2014GB004920).

Fitzsimmons, J.N., Carrasco, G.G., Wu, J., **Hatta, M.**, Measures, C.I., Conway, T.M., John, S.G., Boyle, E.A. (2015). Partitioning of dissolved iron and iron isotopes into soluble and colloidal phases along the U.S. GEOTRACES North Atlantic Zonal Transect, *Deep-Sea Res. II*. doi: [10.1016/j.dsr2.2014.11.014](https://doi.org/10.1016/j.dsr2.2014.11.014).

Measures, C.I., **Hatta, M.**, Fitzsimmons, J., Morton, P., Dissolved Al in the zonal N Atlantic section of the US GEOTRACES 2010/2011 cruises. (2015). *Deep-Sea Res. II*. 116. 176-186. doi:[10.1016/j.dsr2.2014.07.006](https://doi.org/10.1016/j.dsr2.2014.07.006).

Hatta, M., Measures, C.I., Wu, J., Fitzsimmons, J., Sedwick, P., Morton, P. (2015). Overview: Dissolved Fe and Mn concentrations in the North Atlantic Ocean during GEOTRACES 2010/2011 cruises. *Deep-Sea Res. II*. 116.117-129. doi: [10.1016/j.dsr2.2014.07.005](https://doi.org/10.1016/j.dsr2.2014.07.005).

2016

Hatta, M., Measures, C.I., Lam, P.J., Ohnemus, D.C., Auro, M.E., Grand, M.M., Selph, K.E. (2016). The relative roles of modified circumpolar deep water and benthic sources in supplying iron to the recurrent phytoplankton blooms above Pennell and Mawson Banks, Ross Sea, Antarctica, *Journal of Marine Systems*. doi: [10.1016/j.jmarsys.2016.07.009](https://doi.org/10.1016/j.jmarsys.2016.07.009).

Kohut, J.T., Kustka, A.B., Hiscock, M., Lam, P., Measures, C., Milligan, A., White, A., Carvalho, F., **Hatta, M.**, Jones, B.M., Ohnemus, D.C., Swartz, J.M. (2016). Mesoscale variability of the summer bloom over the Northern Ross Sea Shelf: A Tale of two banks. *Journal of Marine Systems*. doi: [10.1016/j.jmarsys.2016.06.009](https://doi.org/10.1016/j.jmarsys.2016.06.009).

2017

Fassbender, A.J et al. (2017). Perspectives on Chemical Oceanography in the 21st century: Participants of the COME ABOARD Meeting examine aspects of the field in the context of 40 years of DISCO. Marine Chemistry. doi: [10.1016/j.marchem.2017.09.002](https://doi.org/10.1016/j.marchem.2017.09.002).

2018

Marsay, C. M, A. Aguilar-Islas, J. N. Fitzsimmons, **M. Hatta**, L. T. Jensen, S. G. John, D. Kadko, W. M. Landing, N. T. Lanning, P. L. Morton, A. Pasqualini, S. Rauschenberg, R. M. Sherrell, Dissolved and Particulate trace elements in late summer Arctic melt ponds. Marine Chemistry. 204. 70-85. 2018. doi:[10.1016/j.marchem.2018.06.002](https://doi.org/10.1016/j.marchem.2018.06.002).

Schlitzer, R. and the GEOTRACES Group, The GEOTRACES Intermediate Data Product 2017. Chemical Geology. 493. 210-223. 2018. doi:[10.1016/j.chemgeo.2018.05.040](https://doi.org/10.1016/j.chemgeo.2018.05.040).

Hatta, M., Measures, C.I., Ruzicka, J. J. (2018). Programmable Flow Injection. Principle, methodology and application for trace analysis of iron in a sea water matrix. Talanta 178. 698-703. 2018. doi: [10.1016/j.talanta.2017.10.007](https://doi.org/10.1016/j.talanta.2017.10.007).

2019

Jiang, M., Measures, C.I., Barbeau, K.A., Charette, M.A., Gille, C.S., **Hatta, M.**, Kahru, M., Mitchell, B.G., Naveira Garabato, A.C., Reiss, C., Selph, K., Zhou, M. (2019) Fe sources and transport from the Antarctic Peninsula shelf to the southern Scotia Sea. Deep-Sea Research Part I. 150. doi: [10.1016/j.dsr.2019.06.006](https://doi.org/10.1016/j.dsr.2019.06.006).

Ruzicka, J., Marshall, G.D., Measures, C.I., **Hatta, M.** (2019) Flow injection programmed to function in batch mode is used to determine molar absorptivity and to investigate the phosphomolybdenum blue method. Talanta 201. 519-526. doi: [10.1016/j.talanta.2019.04.015](https://doi.org/10.1016/j.talanta.2019.04.015).

Drazen, J.C., Smith, C.R., Gjerde, K., Au, W., Black, J., Carter, G., Clark, M., Durden, J.M., Dutrieux, P., Goetze, E., Haddock, S., **Hatta, M.**, Hauton, C., Hill, P., Koslow, J., Leitner, A.B., Measures, C., Pacini, A., Parrish, F., Peacock, T., Perelman, J., Sutton, T., Taymans, C., Tunnicliffe, V., Watling, L., Yamamoto, H., Young, E., Ziegler, A.Z. (2019). Report of the workshop Evaluating the nature of midwater mining plumes and their potential effects on midwater ecosystems. Research Ideas and Outcomes 5: doi: [10.3897/rio.5.e33527](https://doi.org/10.3897/rio.5.e33527).

Hatta, M., Measures, C.I., Ruzicka, J.J. Determination of traces of phosphate in sea water is automated by programmable flow injection, and optimized by means of novel information on kinetics of formation and spectra of phosphomolybdenum blue. Talanta. 191. 333-341. doi: [10.1016/j.talanta.2018.08.045](https://doi.org/10.1016/j.talanta.2018.08.045).

2020

Hayes, C.T., Fitzsimmons, J. N., Jensen, L. T., Lanning, N. T., **Hatta, M.**, McGee, D., Boyle, E. A. (2020) A Lagrangian View of Trace Elements and Isotopes in the North Pacific. JGR Ocean. 125. e2019JC015862. doi: [10.1029/2019JC015862](https://doi.org/10.1029/2019JC015862).

Jenkins, W.J., **Hatta, M.**, Fitzsimmons, J., Schlitzer, R., Lanning, N.T., R., Shiller, A., Buckley, N.R., German, C.R., Lott III, D.E., Weiss, G., Whitmore, L., Casciotti, K., Lam, P.J., Cutter, G.A., Cahill, K.L. (2020) An intermediate-depth source of hydrothermal ^3He and dissolved iron in the North Pacific. Earth and Planetary Science Letters 539, 116223. doi: [10.1016/j.epsl.2020.116223](https://doi.org/10.1016/j.epsl.2020.116223).

Charette, M.A., Kipp, L.E., Jensen, L. T., Dabrowski, J. S., Whitmore, L.M., Fitzsimmons, J., Williford, T., Ulfso, A., Jones, E., Bundy, R.M., Vivancos, S. M., Pahnke, K., John, S.G., Ziang, Y., **Hatta, M.**, Petrova, M.V., Heimbürger-Boavida, L-E., Bauch, D., Newton, R., Pasqualini, A., Agather, A.M., Amon, R.M.W., Anderson, R.F., Andersson, P.S., Benner, R., Bowman, K.L., Edwards, R.L., Gdaniec, S., Gerringa, L.J.A., González, A.G., Granskog, M., Haley, B., Hammerschmidt, C.R., Hansell, D.A., Henderson, P.B., Kadko, D.C., Kaiser, K., Laan, P., Lam, P.J., Lamborg, C.H., Levier, M., Li, X., Margolin, A.R., Measures, C.I., Middag, R., Millero, F.J., Moore, W.S., Paffrath, R., Planquette, H., Rabe, B., Reader, H., Rember, R., Rijkenberg, M.J.A., Roy-Barman, M., van der Loeff, M.R., Saito, M., Schauer, U., Schlosser, P., Sherrell, R.M., Shiller, A.M., Slagter, H., Sonke, J.E., Stedmon, C., Woosley, R. J., Valk, O., van Ooijen, J., Zhang, R. (2020) The Transpolar Drift as a Source of Riverine and Shelf-Derived Trace Elements to the Central Arctic Ocean. JGR. Ocean. 125. e2019JC015920, doi: [10.1029/2019JC015920](https://doi.org/10.1029/2019JC015920).

Submitted and under review.

Drazen, J.C., Smith, C.R, Gjerde, K., Haddock, S., Dutrieux, P., Perelman, J.N., Peacock, T., Goetze, E., Leitner, A., Sutton, T., Hauton, C., Pacini, A., Carter, G., Clark, M., **Hatta, M.**, Choy, A., Yamamoto, H., Koslow, T., Watling, L. Consideration of midwater ecosystems is required to fully evaluate the environmental risks of deep-sea mining.

Bundy, R.M., Tagliabue, Al., Hawco, N.J., Morton, P.L., **Hatta, M.**, Cape, M.R., Saito, M.A. Elevated cobalt in surface waters of the Arctic Ocean.

Hatta, M., Ruzicka, J., Measures, C.I., The performance of a new linear long light path flow cell is compared with a liquid core waveguide and the linear cell is used for spectrophotometric determination of nitrite in sea water at nanomolar concentrations, Talanta.

Non-refereed.

2002

Hatta, M. and Zhang, J., Reconfirmation of the Japan Sea subduction by dissolved oxygen determination in 2001 autumn. Sixth International Symposium on the Geochemistry of the Earth's Surface (GES-6), 332-336, May 2002.

2003

Hatta, M. and Zhang, J., Water circulation in Japan Sea: Using dissolved rare earth elements as the tracers. Geochimica et Cosmochimica Acta, 67, A139, September 2003.

2004

Hatta, M and Zhang, J., Water mass structure of the semi-closed marginal seas: an approach to the East China Sea using chemical tracers. Proceedings of the second international symposium on PEACE, 37-40, November 2004

2005

Hatta, M and Zhang, J., Water Mass Characterization by Chemical Tracers and Freshwater Circulation in the East China Sea. Workshop on the Marine Environment in the East Asian Marginal Seas – Transport of materials-, 122-125, November 2005

2018

Hatta, M., “Women in oceanography” ([in Japanese](#)). Japanese Woman Society in Oceanography.

CONFERENCE PRESENTATIONS & INVITED CONTRIBUTIONS

2002

- Sep. **Symposium of the Oceanographic Society of Japan**, Hokkaido, Japan.
Water mass distribution and its alteration in Japan Sea by the determination of dissolved oxygen and REE. (in Japanese)

2003

- Sep. **Goldschmidt Conference**, Kurashiki, Hiroshima, Japan. [Abstract. A139.](#)
Water circulation in Japan Sea: using dissolved rare earth elements as the tracers.

2005

- Mar. **Annual Spring meeting of Oceanographic Society of Japan**, Tokyo, Japan.
Water mass structure of the East China Sea using chemical tracers. (in Japanese)
- Sep. **Annual meeting of Geochemical Society of Japan**, Okinawa, Japan.
Water circulation in Japan Sea: using dissolved rare earth elements as the tracers. (in Japanese)

2008

- Mar. **Ocean Science Meeting**, Orland, Florida, USA.
Iron fluxes from the shelf regions near Elephant Island in the Drake Passage during austral-winter 2006. [Abstract.](#)
- Dec. **GEOTRACES Workshop**, San Francisco, CA, USA.
The CLIVAR CTD-rosette sampling system.
- Dec. **AGU Fall meeting**, San Francisco, CA, USA.
Dissolved Iron and Aluminium Distributions in the Central and North Indian Ocean During CLIVAR-CO₂ Repeat Hydrography I9N Transect. [Abstract.](#)

2012

- Sep. **Ocean Seminar (INVITED)**, Xiamen University, China.
Clean Sampling System and analysis on board – University of Hawaii portable laboratory and Flow injection analysis.
- Dec. **AGU Fall meeting**, San Francisco, CA, USA.
High Resolution Distribution Iron and Manganese in the North Atlantic Ocean during the 2010 and 2011 US GEOTRACES cruise. [Abstract.](#)

2013

- Mar. **GEOTRACES N. Atlantic Post cruise meeting**, Norfolk, VG, USA.
High resolution distributions of dissolved Fe and Mn in the North Atlantic Ocean.

2014

- Feb. **Ocean Science Meeting, Honolulu, Hawaii, USA.**
Dissolved Fe, Mn, and Al concentrations on the shelf/slope in the Ross Sea during the 2011 SEAFARERS expedition. [Abstract](#).
- Sep. **Symposium for young scientists and students (INVITED), Toyama, Japan.**
Ocean research (in Japanese).
- Sep. **The Geochemical Society of Japan public lecture (INVITED), Toyama, Japan.**
Oceanographic Research in the Southern Ocean (in Japanese).
- Sep. **The Geochemical Society of Japan, Toyama, Japan**
Dissolved trace metals in the ocean, GEOTRACES and CLIVAR project. (in Japanese).

2016

- Feb. **Ocean Science Meeting, New Orleans, USA.**
Dissolved Fe and Mn during the A16S CLIVAR repeat hydrography transect in the South Atlantic. [Abstract](#).
- Jun. **Goldschmidt meeting (INVITED), Yokohama, Japan.**
GEOTRACES Arctic Section: Shipboard determination of key trace elements. [Abstract](#).

2017

- Feb. **ASLO Aquatic Sciences Meeting (INVITED), Hawaii, USA.**
GEOTRACES Arctic Section: Shipboard determination of dissolved Fe and Mn concentrations. [Abstract](#).

2018

- May. **The “GEOTRACES IDP 2017 data with Ocean Data View” Workshop (INVITED),**
Qingdao, China. A hands-on two-day workshop to 82 students in Ocean University of China. ([workshop report](#))

2019

- Sep. **The SCOR-GEOTRACES Joint Session at the Oceanographic Society of Japan (INVITED),**
Toyama, Japan.
US GEOTRACES inception, strategy and outcomes.

2020

- June. **Goldschmidt meeting,**
- Dec. **Pacifichem (INVITED), Honolulu**
.

CONFERENCE PRESENTATIONS - POSTERS

2001

- Sep. **Annual meeting of Geochemical Society of Japan**, Tokyo, Japan.
The flux of dissolved and particulate phosphorus from river to Toyama Bay. (in Japanese)

2002

- May. **Sixth International Symposium on the Geochemistry of the Earth's Surface**, Honolulu, Hawaii, USA.
Reconfirmation of the Japan Sea subduction by dissolved oxygen determination in 2001 autumn.

2004

- Sep. **Geochemical Society of Japan**, Shizuoka, Japan.
Nutrients input carried by freshwater and its impact in Toyama Bay. (in Japanese)
- Nov. **Program of the East Asian Cooperative Experiments Workshop (PEACE)**, Fukuoka, Japan.
Water mass structure of the semi-closed marginal seas: an approach to the East China Sea using chemical tracers.

2005

- Feb. **International Ocean Research Conference**, UNESCO, Paris, France.
Biogeochemical Cycles of Trace Elements and Implications for Marine Ecosystems.
- Nov. **Workshop on the Marine Environment in the East Asian Marginal Seas -Transport of materials-**, Fukuoka, Japan.
Water Mass Characterization by Chemical Tracers and Freshwater Circulation in the East China Sea.

2006

- Feb. **Ocean Science Meeting**, Honolulu, Hawaii, USA.
Subduction Water Mass Characterization by Rare Earth in Japan Sea -a Miniature Case of the World Ocean. [Abstract](#).
- Dec. **AGU Fall meeting**, San Francisco, CA, USA.
SGD Flux of Freshwater and Nutrients into the Coastal Area. [Abstract](#).

2010

- Feb. **Ocean Sciences Meeting**, Portland, OR, USA.
Dissolved Iron and Aluminium Distributions in the Western and Central South Pacific Ocean During CLIVAR-CO₂ Repeat Hydrography P6 Transect. [Abstract](#).

2011

Jun. **Modeling and Synthesis of Southern Ocean Natural Iron Fertilization**, Woods Hole Oceanographic Institution, MA, USA.
Iron fluxes from the shelf regions near South Shetland Island in the Drake Passage during austral-winter 2006.

2012

Feb. **Ocean Sciences Meeting**, Salt Lake City, Utah, USA.
Iron fluxes from the shelf regions in the Drake Passage during austral-winter 2006.
[Abstract.](#)

2018

Feb. **Ocean Sciences Meeting**, Portland, OR, USA.
Phosphate determination using micro-Sequential Injection Lab on Valve during an international nutrient inter-calibration cruise in the Southern Ocean. [Abstract.](#)

2019

Sep. **OceanObs'19**, Honolulu, HI, USA.
From autoanalyzer to chemical sensor: the future of biogeochemical monitoring.

SEAGOING EXPERIENCE

2001	POST-WOCE Hydrography. North Pacific and Bering Sea. RV MIRAI	55 days
2001-2004	Marine Biogeochemical Cycle Research. East China Sea, Sea of Japan, Toyama Bay	
	Tansei, Nagasaki, Kakuyo	94 days
2006	OPP. BWZ. Drake Passage. RV Palmer	42 days
2007	CLIVAR I09N. Indian Ocean. RV Revelle	42 days
2008	US. GEOTRACES Intercalibration. North Atlantic.	
	RV Knorr	20 days
2009	CLIVAR I05. Indian Ocean. RV Revelle	57 days
2010	US. GEOTRACES. North Atlantic. RV Knorr	20 days
2011	OPP. SEAFARERS. Ross Sea. RV Palmer	30 days
2011	US. GEOTRACES. North Atlantic. RV Knorr	30 days

2013/14	CLIVAR A16S. South Atlantic.	RV Ron Brown	42 days
2015	US. GEOTRACES. Arctic Ocean.	USCGC Healy.	64 days
2017	An international nutrient inter-calibration cruise. Southern Ocean.		
		RV investigator.	14 days
2018	US. GEOTRACES. Pacific Ocean.	RV Revelle	65 days

TEACHING EXPERIENCE

2001

Teaching certificates for high school & Junior high school (science), Japan.

- Completed teaching certification programs in Science at University of Toyama, including 1-month internship at a local high school to teach chemistry classes.

2000-2001

Analytical chemical method in Environmental Biology and Chemistry. University of Toyama, Japan.

- Help setting up lab classes (30 undergraduate students) on analytical methodologies and their application to environmental sciences.

2001-2006

Biogeochemical Method in Life and Environmental Sciences. University of Toyama, Japan.

- Gave lab classes and 30-40 min guest lectures, and graded the reports (30 undergraduate students) on analytical methodologies and their application to environmental sciences.

2007

Biogeochemical Method in Oceanography. University of Hawaii, USA.

- Gave lab class (4-5 graduate students) on Flow Injection Analysis and its application to chemical oceanography (OCN633).

2013

Lecture for Groundwater Pollution. University of Hawaii, USA.

- Gave 75-min guest lecture (7-8 undergraduate students) on aquatic pollution (OCN320).

2015-2020

Lectures for Ocean Data View. University of Hawaii, USA.

- Gave 75-min guest lectures (7-8 graduate students) on Ocean Data View software and its application to chemical oceanography (OCN623 during Spring 2015, 2016, 2017, 2018, and 2019).

The “GEOTRACES IDP 2017 data with Ocean Data View” Workshop (INVITED), Ocean University of China, Qingdao, China. ([workshop report](#))

- Gave a whole two-days classes (82 graduate students) on the U.S. GEOTRACES project, Ocean Data View software and its application to chemical oceanography.

Lecture on Chemical Oceanography (INVITED). Online lecture, University of Toyama, Japan.

- Gave a 60-min lecture (35 Japanese students in University of Toyama, Japan) on chemical oceanography.

Lecture on Earth and Environment (INVITED). Online lecture, University of Toyama, Japan.

- Gave a 60-min lecture (166 Japanese 1st year undergraduates in University of Toyama, Japan) on chemical oceanography.

Lecture on Science in Ocean (INVITED). Online lecture, University of Toyama, Japan.

- Gave a 60-min lecture (35 Japanese 3rd year undergraduates in University of Toyama, Japan) on chemical oceanography.

The Mauka to Makai Oceanography Summer Bridge Program, University of Hawaii, USA.

- Gave Several lectures (e.g Community College students) on chemical oceanography and data analysis, as well as a hands-on curriculum (labs and field works) during the 6-week summer bridge program (2018 and 2019).

SYNERGISTIC ACTIVITIES

Goldschmidt's 2020 Local Organizing Committee member 2019.

Guest editor for special issue of JGR Ocean 2020.

Ad Hoc Reviewer Journal of Oceanography, Geochemical Journal, Limnology and Oceanography, Marine Chemistry, Analytical Methods, Frontiers in Marine Biogeochemistry, Journal of marine systems, Marine Pollution Bulletin, Philosophical transactions of the royal society A, Biogeoscience.

GES Presentation Reviewer 2017, 2018.

Workshops Workshop co-organizer for international workshops

2007. GEOTRACES Pacific Meeting Basin planning workshop. (~50 participants).

2008, 2010, 2012, 2014, 2016. DISCO/PODS meeting. (60 participants).

2013. Collaborative on Oceanographic Chemical Analysis (COCA). (51 participants).

2018. The "GEOTRACES IDP 2017 data with ODV" Workshop (82 participants)

OUTREACH EXPERIENCE

2015-2016. Science lectures, Mid-Pacific Institute and the Honolulu Waldorf School, Hawaii, USA.

A pre-cruise and a post-cruise lectures to ~150 students (6-10 years old) at Mid-Pacific Institute and a post-cruise lecture to ~50 students (15-18 years old) at Honolulu Waldorf School about the GEOTRACES projects.

2016. Science lecture to Japanese undergraduate students at University of Toyama.

An international science lecture using Skype video call to ~10 Japanese undergraduate students at University of Toyama about this cruise in English and in Japanese.

2017. Alelo, PBS Hawaii, Honolulu, Hawaii, USA.

A public interview about the Arctic cruise.

2017. Honolulu Science Café, Honolulu, Hawaii, USA.

A public talk during the Honolulu Science Café to local community members (30-40 people).

2017 & 2019. Science lecture to Japanese Kanagawa-prefecture marine high school students,
Hawaii, USA.

Public talk about the chemical oceanographer at sea to the high school students visiting in University of Hawaii. (40 students every year).

2018. Japanese Woman Society in Oceanography, remote access via Zoom

A discussion with Japanese oceanographic members (15 people) and a published essay "Women in oceanography" ([in Japanese](#)).

2018. GEOTRACES PMT cruise ship-tour on R/V Reville (NSF outreach)

Undergraduates from University of Hawaii at Hilo (50 students).

PRIZE AND AWARDS

2005 The best student poster for the 2005 International Ocean Research Conference, The Oceanography Society. [Meeting report.](#)

2005 Fellowship for 2005 International Ocean Research Conference from the Oceanographic Society of Japan

2005 Fellowship for 2006 Ocean Science Meeting from Japan Marine Science Foundation

FUNDED PROPOSALS

2005 SASAKAWA SCIENTIFIC RESEARCH GRANT, the Japan Science Society, [17-327M](#), 2005-2006, 510,000 yen. (Hatta PI)

2014 National Science Foundation, GEOTRACES Arctic Section: Shipboard determination of key trace elements (NSF [OCE-1439253](#)) 2015-2017. \$366,783. (Hatta co-PI)

2016 National Science Foundation, Automated Instrumentation for Chemical Oceanography Based on Sequential Injection Lab-On-valve Technology (NSF [OCE-1634463](#)) 2016-2019. \$534,389. (Hatta co-PI)

2017 National Science Foundation, US GEOTRACES PMT: Shipboard determination of key dissolved trace elements (NSF [OCE-1736906](#)) 2017-2020. \$ 438,766. (Hatta PI) includes 3-yrs of student funding.

2019 National Science Foundation, Collaborative Research (UH is lead Institution): Developing Automated Nutrient and Trace Metal Methodology using Programmable Flow Injection (NSF [OCE-192490](#)) 2019-2022. \$ 523,836. (Hatta PI).

2020 DeepGreen, Characterization and monitoring of the water column ecosystem in the eastern CCZ (NORI-D). \$514,191. (Hatta PI).