

## **Text Book**

1) Toyota, T. (2009): Application of remote sensing to the estimation of sea ice thickness distribution. In "Advances in Geoscience and Remote Sensing", Jedlovec, G. (Ed.), pp.21-44, In-Tech, ISBN: 978-953-307-005-6, Vienna, Austria.

## **Journal papers**

- 1) F. Miyamaru, Y. Saito, M. W. Takeda, L. Liu, B. Hou, W. Wen, and P. Sheng, 2009 : Emission of terahertz radiations from fractal antennas, *Applied Physics Letters*, 95, 221111, doi:10.1063/1.3271181
- 2) JAKKILA Juhon, LEPPÄRANTA Matti, KAWAMURA Toshiyuki, SHIRASAWA Kunio, SALONEN Kalevi, 2009 : Radiation transfer and heat budget during the ice season in Lake Pääjärvi, Finland, *Aquatic Ecology*, 43(3), 681-692, doi:10.1007/s10452.009.9275.2
- 3) Yasunari J. Teppey, and Yamazaki Koji, 2009 : Impact of Asian dust storm associated with the stratosphere-troposphere transport in the spring of 2001 and 2002 on dust and tritium variations in Mount Wrangell ice core, Alaska, *Atmospheric Environment*, 43, 2582-2590, 10.1016/j.atmosenv.2009.02.025
- 4) Ishida, K. and Ohshima K. I. ,2009 : Ice band characteristics of Antarctic seasonal ice zone observed using MOS MESSR images, *Atmosphere-Ocean*,47,doi:10.3137/OC300.2009
- 5) L. Cao, 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, A. Yool,2009 : The importance of ocean transport in the fate of anthropogenic CO<sub>2</sub>, *Biogeosciences*, 6, 375-390
- 6) Kurahashi-Nakamura, T., Abe-Ouchi, A., Yamanaka, Y., 2009 : Effects of physical changes in the ocean on the atmospheric pCO<sub>2</sub>: glacial-interglacial cycles, *Climate Dynamics*,DOI: 10.1007/s00382-009-0609-5
- 7) Fukamachi, Y., Shirasawa, K., Polomoshnov, A. M., Ohshima, K. I.,Kalinin, E., Nihashi, S.,Melling, H., Mizuta, G., and Wakatsuchi, M.,2009 : Direct observations of sea-ice thickness and brine rejection off Sakhalin in the Sea of Okhotsk, *Continental Shelf Research*, 29(11-12), 1541-1548, doi:10.1016/j.csr.2009.04.005
- 8) NOMURA Daiki, TAKATSUKA Toru, ISHIKAWA Masao, KAWAMURA Toshiyuki, SHIRASAWA Kunio, YOSHIKAWA-INOUE Hisayuki,2009 : Transport of chemical components in sea ice and under-ice water during melting in the seasonally ice-covered Saroma-ko Lagoon,Hokkaido,Japan Estuarine, Coastal and Shelf Science, 81, 201-209, doi:10.1016/j.ecss.2008.10.012

- 9) S. L. Smith, N. Yoshie, Y. Yamanaka, 2009 : Physiological acclimation by phytoplankton explains observed changes in Si and N uptake rates during the SERIES iron-enrichment experiment, *Deep Sea Research I*, 57, 394-408, doi:10.1016/j.ecolmodel.2006.09.016
- 10) Matsuda, J., H. Mitsudera, T. Nakamura, K. Uchimoto, T. Nakanowatari, N. Ebuchi, 2009 : Wind and buoyancy driven overturning circulation in the Sea of Okhotsk, *Deep-Sea Res. Part I*, 56 (9), 1401-1418 doi:10.1016/j.dsr.2009.04.014
- 11) SHIRASAWA Kunio, EICKEN Hajo, TATEYAMA Kazutaka, TAKATSUKA Toru, KAWAMURA Toshiyuki, 2009 : Sea-ice thickness variability in the Chukchi Sea, spring and summer 2002-2004, *Deep-Sea Research Part II*, 56(17), 1182-1200, doi:10.1016/j.dsr2.2008.10.015
- 12) Sumata, H., Minobe, S., Motoi T., Chan, W.-L., 2009 : A semi-analytical model of barotropic and baroclinic flows for an open Panama Gateway, *Dynamics of Atmospheres and Oceans*, doi:10.1016/j.dynatmoce.2009.10.001
- 13) Yamamoto, A., Y. Yamanaka, E. Tajika, 2009 : Modeling of methane bubbles released from sea-floor gas hydrate: Condition required for methane emission to the atmosphere, *Earth and Planetary Science Letters*, 284, 590-598, doi:10.1016/j.ecolmodel.2006.09.016
- 14) Misumi, K., Y. Yamanaka, E. Tajika, 2009 : Numerical simulation of atmospheric and oceanic biogeochemical cycles to an episodic CO<sub>2</sub> release event: implications for the cause of mid-Cretaceous Ocean Anoxic Event-1a, *Earth and Planetary Science Letters*, 286, 316-323, doi:10.1016/j.epsl.2009.06.045
- 15) T. Okunishi, Y. Yamanaka, S. Ito, 2009 : A simulation model for Japanese sardine (*Sardinops melanostictus*) migrations in the western North Pacific, *Ecological Modeling*, 220, 462-479, doi:10.1016/j.ecolmodel.2008.10.020.
- 16) Kitauchi, H., and M. Ikeda, 2009 : An analytic solution of steady Stokes flow on a rotating polar cap, *Fluid Dynamics Res.*, 41, 045505
- 17) Wang, J., J. Zhang, E. Watanabe, M. Ikeda, K. Mizobata, J.E. Walsh, X. Bai and B. Wu, Is the dipole anomaly a major driver to record lows in Arctic summer sea ice extent?, *Geophys. Res. Lett.*, 36, doi:10.1029/2008GL036706
- 18) Nakamura T., Y. Isoda, H. Mitsudera, S. Takagi, M. Nagasawa, 2009 : Breaking of unsteady lee waves generated by diurnal tides, *Geophys. Res. Lett.*, 37, L04602, 10.1029/2009GL041456
- 19) Hashioka, T., T. T. Sakamoto, Y. Yamanaka, 2009 : Potential impact of global warming on spring bloom projected by an eddy-permitting 3-D ecosystem model, *Geophysical Research Letter*, 36, L20604, doi:10.1029/2009GL038912
- 20) Oka, A., H. Hasumi, H. Obata, T. Gamo, Y. Yamanaka, 2009 : Study on vertical

profiles of rare earth elements by using an ocean general circulation model, *Global Biogeochemical Cycles*, 23, GB4025, doi:10.1029/2008GB003353

21) Ito S., K. A. Rose, A. J. Miller, K. Drinkwater, K. M. Brander, J. E. Overland, S. Sundby, E. Curchitser, J. W. Hurrell, Y. Yamanak, 2009 : Ocean ecosystem responses to future global change scenarios: A way forward, *Global Change and Marine Ecosystems*(Eds.: A way forward, In: M. Barange, J.G. Field, R.H. Harris, E. Hofmann, R. I. Perry, F. Werner). Oxford University Press, 287-322

22) Ikeda, M., 2009 : Mechanisms of the recent sea ice decay in the Arctic Ocean related to the Pacific-to-Atlantic pathway, *Influence of Climate Change on the Changing Arctic and Sub-Arctic Conditions*, Springer, Liege, 161-169

23) Y. Masuda, Y. Yamanaka, Y. Sasai, M. Magi, T. Ohsumi.,2009 : Site selection in CO<sub>2</sub> ocean sequestration: dependence of CO<sub>2</sub> injection flux on eddy activity distribution, *International J. Greenhouse Gas Control*, 3, 67-76

24) Toyota, T., Nakamura, K., Uto, S. Ohshima, K. I., and Ebuchi, N.,2009: Retrieval of sea ice thickness distribution in the seasonal ice zone from air-borne L-band SAR, *International Journal of Remote Sensing*, 30(12), 3171-3189

25) Iijima, Y., Aoki, S., and Kutsuwada, T., 2009 : The Antarctic Oscillation and Southern Ocean sea surface height basin mode, *J. Oceanogr.*, 65 (1), 53-60

26) Hiraike, Y., and M. Ikeda, 2009 : Descending surface water at the Antarctic marginal ice zone and its contribution to the Intermediate Water using an ice-ocean model, *J. Oceanogr.*, 65, 587-603

27) Nakamura T., T. Toyoda, Y. Ishikawa, and T. Awaji, 2009 : Effects of mass source/sink at the western boundary on the wind-driven gyres: Implications for the ventilation of the North Pacific intermediate layer through convection in the Okhotsk Sea and tidal mixing at the Kuril Straits, *J. Oceanogr.*, Vol. 66, 41-60

28) Nakamura T and T. Awaji, 2009 : "Scattering of internal waves with frequency change over rough topography , *J. Phys. Oceanogr.*Vol. 39, 1574-1594

29) Tanimoto, Y., S.-P. Xie, K. Kai, H. Okajima, H. Tokinaga, T. Murayama, M. Nonaka, and H. Nakamura, 2009 : Observations of marine atmospheric boundary layer transitions across the summer Kuroshio Extension, *Journal of Climate*, 22, 1360-1374

30) Tokinaga, H., Y. Tanimoto, S.-P. Xie, T. Sampe, H. Tomita, and H. Ichikawa,2009 : Ocean frontal effects on the vertical development of clouds over the Northwest Pacific: In situ and satellite observations., *Journal of Climate*, 22, 4241-4260.

31) Rodgers, K.B., R.M. Key, A. Gnanadesikan, J.L. Sarmiento, O. Aumont, L. Bopp, S.C. Doney, J.P. Dunne, D.M. Glover, A. Ishida, M. Ishii, A.R. Jacobson, C. Lo Monaco, E. Maier-Reimer,N. Metzl, F. F. Perez, A.F. Rios, R. Wanninkhof, P. Wetzal, C.D. Winn, Y.

- Yamanaka, 2009 : Altimetry helps to explain patchy changes in hydrographic carbon measurement, *Journal of Geophysical Research - Oceans*, 114, C09013
- 32) Fujiwara, M., S. Iwasaki, A. Shimizu, Y. Inai, M. Shiotani, F. Hasebe, I. Matsui, N. Sugimoto, H. Okamoto, N. Nishi, A. Hamada, T. Sakazaki, and K. Yoneyama , 2009 : Cirrus observations in the tropical tropopause layer over the western Pacific, *Journal of Geophysical Research*, 114, D09304, doi:10.1029/2008JD011040
- 33) Kawaguchi and H. Mitsudera, 2009 : Effects of along-shore wind on DSW formation beneath coastal polynyas: Application to the Sea of Okhotsk, 2009 : *J. Geophysical Research*, 114, C10013, 10.1029/2008JC005041
- 34) Nihashi, S., Ohshima, K. I., Tamura, T., Fukamachi, Y., and Saitoh, S., 2009 : Thickness and production of sea ice in the Okhotsk Sea coastal polynyas from AMSR-E, *Journal of Geophysical Research - Oceans*, 114, C10025, doi:10.1029/2008JC005222
- 35) Horinouchi, T. and T. Tsuda, 2009 : Spatial structures and statistics of atmospheric gravity waves derived using a heuristic vertical cross-section extraction from COSMIC GPS radio occultation data, *Journal of Geophysical Research*, 114, D16110
- 36) Udagawa Yuhsuke, Tachibana Yoshihiro, and Yamazaki Koji, 2009 : Modulation in interannual sea-ice patterns in the Southern Ocean in association with large-scale atmospheric mode shift, *Journal of Geophysical Research*, 114, D21103.10.1029/2009JDO11807
- 37) Mizuta, G : Rossby wave radiation from an eastward jet and its recirculations, *Journal of Marine Research*, 67, 185-212
- 38) Ebuchi, N., Fukamachi, Y., Ohshima, K.I., and Wakatsuchi, M., 2009 : Subinertial and seasonal variations in the Soya Warm Current revealed by HF radars, coastal tide gauges, and bottom-mounted ADCP, *Journal of Oceanography*, vol. 65, no. 1, pp. 31-43
- 39) M. O. Chikamoto, K. Matsumoto, Y. Yamanaka, 2009 : Influence of export rain ratio changes on atmospheric CO<sub>2</sub> and sedimentary calcite preservation, *Journal of Oceanography*, 65, 209-221
- 40) Fujisaki, A., Yamaguchi, H., Toyota, T., Futatsudera, A., Miyanaga, A. 2009 : Measurements of air-ice drag coefficient over the ice-covered Sea of Okhotsk, *Journal of Oceanography*, Vol.65, No.4, 487-498
- 41) Kusahara, K., Ohshima, K. I., 2009 : Dynamics of the wind-driven sea level variation around Antarctica, *Journal of Physical Oceanography*, 39, 658-674
- 42) Aoki, K., Kubokawa, A., Sasaki, H., and Sasai, Y. 2009 : Midlatitude Baroclinic Rossby Waves in a High-Resolution OGCM Simulation., *Journal of Physical Oceanography*, 39, 2264-2279

- 43) Ebuchi, N., 2009 : Evaluation of wind speed observed by AMSR using data from ocean buoys and SeaWinds, *Journal of Remote Sensing Society of Japan*, vol. 29, no. 1, pp. 174-178
- 44) Sakurai, N., M. Kawashima, Y. Fujiyoshi, H. Hashiguchi, S. Mori, J. Hamada, F. Murata, M-D. Yamanaka, Y-I Tauhid, T. Sribimawati and B. Suhardi, 2009 : structure of migratory cloud systems with diurnal cycle over Sumatera Island during CPEA-I campaign, *J. Meteor. Soc. Japan*,87(1),15-170
- 45) Sakurai Namiko, Kawashima Masayuki, Fujiyoshi Yasushi, Hashiguchi Hiroyuki, Mori Syuichi, Hamada Hun-ichi, Murata Fumie, Yamanaka D. Manabu, Tauhid Yudi Iman, Sribimawati Tien, Suhardi Budi, 2009 : Internal structure of migratory cloud systems with diurnal cycle over Sumatera Island during CPEA-I campaign, *J. Meteor. Soc. Japan*,87 (1) ,157– 170
- 46) Ohtake Hideaki, Kawashima Masayuki, Fujiyoshi Yasushi,2009 : The formation mechanism of a thick cloud band over the northern part of the Sea of Japan during cloud air outbreaks, *J. Meteor. Soc. Japan*,87 (2) ,289– 306
- 47) Geng Biao, Yamada Hiroyuki, Krishnareddigari Krishna Reddy, Uyeda Hiroshi, and Fujiyoshi Yasushi,2009 : Mesoscale development and along-frontal variation of a Meiyu/Baiu front and precipitation observed in the downstream region of the Yangtze river, *J. Meteor. Soc. Japan*,87 (3) ,423–457
- 48) Watanabe, T.2009 : LES study on the structure of coherent eddies inducing predominant perturbations in velocities in the roughness sublayer over plant canopies, *Journal of the Meteorological Society of Japan*, 87, 39-56
- 49) Oshima, K., and Y. Tanimoto, 2009 : An evaluation in reproducibility of Pacific Decadal Oscillation on the simulations of CMIP3 models, *Journal of the Meteorological Society of Japan*, Vol. 87, 755-770. ,doi:10.2151/jmsj.87.755
- 50) S. L. Smith, Y. Yamanaka, M. Pahlow, A. Oschlies, 2009 : Optimal uptake kinetics: physiological acclimation explains the pattern of nitrate uptake by phytoplankton in the ocean, *Marine Ecology Progress Series*, 384, 1-12
- 51) Mayewski, P. A., Meredith, M. P., Summerhayes, C. P., Turner, J., Worby, A., Barrett, P. J., Casassa, G., Bartler, N. A. N., Bracegirdle, T., Naveira-Garabato, A. C., Bromwich, D., Campbell, H., Hamilton, G. H., Lyons, W. B., Maasch, K. A., Aoki, S., Xiao ,2009 : State of the Antarctic and Southern Ocean Climate System, *Rev. Geophys.*, 47, RG1003, 10.1029/2007RG000231
- 52) Inai, Y., F. Hasebe, K. Shimizu, and M. Fujiwara, 2009 : Correction of radiosonde pressure and temperature measurements using simultaneous GPS height data,*SOLA*, 5, 109-112, doi:10.2151/sola.2009-028

53) Yasunari J. Teppei, and Yamazaki Koji, 2009 : Origins of air masses over an Alaskan glacier and implications for ice core studies in the North Pacific region, SOLA, 5, 77-80, 10.2151/sola.2009-020

54) Toyota, T. (2009): A study on growth processes of sea ice in the southern Sea of Okhotsk, 143pp., VDM Verlag, ISBN: 978-3-639-19602-3, Saarbrücken, Germany

### **Proceedings**

1) Nakanowatari, T., Mitsudera, H., Motoi, T., Ohshima, K. I., and Ishikawa, I., T., Mitsudera, Ohshima, K. I., 2009 : 50-yr scale change in the intermediate water temperature in the western North Pacific simulated by an eddy resolving sea-ice coupled OGCM, PICES Scientific Rep., 36, 102-106

2) NOMURA Daiki, GRADINGER Rolf, EICKEN Hajo, SHIRASAWA Kunio, 2009 : Air-sea ice CO<sub>2</sub> flux over landfast sea ice in the Arctic Ocean, off Barrow, Alaska, Proceedings of the 24th International Symposium on Okhotsk Sea and Sea Ice, Mombetsu, Japan, 15-19 February 2009

3) Ohshima, K. I., Nakanowatari, T., Nakatsuka, T., Nishioka, J., and Wakatsuchi, M., 2009 : Changes in the Sea of Okhotsk due to global warming -Weakening pump function to the North Pacific, PICES Scientific Rep., 36, 16-20

4) Nihashi, S., and N. Ebuchi, 2009 : Characteristics of the Okhotsk coastal polynyas revealed from active and passive microwave satellite observations, Proceedings of 24th International Symposium on Okhotsk Sea and Sea Ice, pp. 105-108

5) Fujiyoshi Yasuhsi, Yamashita Kazuya, and Fujiwara Chusei, 2009 : Detection of organized airflow in the atmospheric boundary layer using a 3D-scanning coherent Doppler lidar, Proc. SPIE, Vol. 7382, 738204, doi:10.1117/12.835943

6) Kawaguchi, Y., Nihashi, S., Mitsudera, F., and Ohshima, K. I., 2009 : Formation of broad opening of coastal polynya, 24th International Symposium on Okhotsk Sea and Sea Ice, Mombetsu, Japan, 88-91

7) Ebuchi, N., Fukamachi, Y., Ohshima, K. I., and Wakatsuchi, M., 2009 : HF radar technology in the Sea of Okhotsk, PICES Scientific Report, vol. 36, pp. 197-202

8) LEPPÄRANTA M., JAATINEN E., KIILTOMÄKI A., JÄRVINEN O., SHIRASAWA K., 2009 : Measurements of light transfer through lake ice cover, Proc. of the 5th Intl. Conference in Optics of Natural Waters, St. Petersburg, Russia, 157-161.

9) Granskog, M., Toyota, T., Hattori, H., Nomura, D. and Krell, A., 2009 : Observations on physical properties and biogeochemistry of sea ice in southern Sea of Okhotsk 2009 0218 Proceedings of The 24th International Symposium on

Okhotsk Sea and Sea Ice, Mombetsu, Japan, February 16-18, 183-186

10) Toyota, T., Kamimura, H., Ono, S., and Cho, K., 2009 : Retrieval of sea ice thickness distribution in the Sea of Okhotsk from ALOS/PALSAR backscatter data, Proceedings of The 24th International Symposium on Okhotsk Sea and Sea Ice, Mombetsu, Japan, February 16-18, 138-142

11) Mitsudera, H., Matsuda, J., Nakamura, T., Uchimoto, K., Nakanowatari, T., and Ebuchi, N., Uchimoto, K., Nakanowatari, T., 2009 : Wind- and buoyancy-driven overturning circulation in the Sea of Okhotsk, Proceedings of 24th International Symposium on Okhotsk Sea and Sea Ice, pp. 121-124