

Curriculum Vitae

KAWAKATSU, Hitoshi

Present Address:

Earthquake Research Institute, The University of Tokyo
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Current Position

Emeritus Professor, The University of Tokyo
Distinguished Visiting Chair, Institute of Earth Sciences, Academia Sinica, Taiwan

Education

1979.03 University of Tokyo, Japan, B.S. Geophysics
1981.03 University of Tokyo, Japan, M.S. Geophysics
1985.03 Stanford University, U.S.A., Ph.D., Geophysics

Positions

1985.04 Post-Doctoral Research Fellow, Stanford University
1985.10 Post-Doctoral Research Fellow, California Institute of Technology
1988.04 Researcher, Geological Survey of Japan
1990.10 Senior Researcher, Geological Survey of Japan
1992.06 Research Associate, Earthquake Research Institute (ERI), University of Tokyo
1993.03 Lecturer, ERI, University of Tokyo
1994.10 Associate Professor, ERI, University of Tokyo
1999.04-2021.3 Professor, ERI, University of Tokyo
2005.04-2007.3, 2011.04-2013.03 Head, Ocean Hemisphere Research Center, ERI, University of Tokyo
2011.04-2013.03 Vice Director, ERI, University of Tokyo
2021.04-2022.03 MOST Visiting Professor, Institute of Earth Sciences, Academia Sinica, Taiwan
2021.06- Emeritus Professor, The University of Tokyo
2022.04-2025.03 Distinguished Visiting Chair, Institute of Earth Sciences, Academia Sinica, Taiwan

Honors

Inoue Fellow, Inoue Foundation for Science, 1995
Fellow, American Geophysical Union, 2012
Benio Gutenberg Medal, European Geosciences Union, 2017
Fellow, American Association for the Advancement of Science, 2020

Visiting Positions

2001.04-2002.03 Visiting Professor, Institute for Study of the Earth's Interior, Okayama University
2002.04-2003.03 Visiting Researcher, National Research Institute for Earth Science and Disaster Prevention (NIED)
2003.01-2003.10 Visiting Professor, Institut de Physique du Globe de Paris
2009.10 Visiting Professor, Institut de Physique du Globe de Paris
2014.04-2014.05 Visiting Professor, Universite Paris Diderot
2014.06-2014.08 Visiting Professor, Institut de Physique du Globe de Paris
2019.4 Visiting Professor, Institut de Physique du Globe de Paris
2020.1 Visiting Expert, Indian Institute of Geomagnetism

Home Page

http://www.eri.u-tokyo.ac.jp/hitosi/index_e.html
<https://www.earth.sinica.edu.tw/en/member/detail/242>

Funding

<https://nrid.nii.ac.jp/ja/nrid/1000060242153/>

Professional Services

(Community services)

1994.04-1997.03 Member of the editorial board, Journal of Physics of the Earth

1994.04-present Member of the board of representatives, Seismological Society of Japan

1997 Guest editor, Earth, Planets and Space

2009.04-present Member of the board of representatives, Japan Geoscience Union (JpGU)

2011.5-2012.5 Member of “the Special Response Committee to Tohoku Earthquake”, Seismological Society of Japan

2011.12-present Member of the Section Science Board (Solid Earth Sciences Section), Japan Geoscience Union (JpGU)

2013.1-2014.12 American Geophysical Union (AGU), Flinn Award Committee

2013.1-2015.12 AGU, Honors Nominating Committee for the Seismology Section

2013.4-2015.3 JpGU Fellow, Selection Committee, Chair

2013.9-present Progress in Earth and Planetary Science, Editor

2014.11-2016.10 JpGU Nishida Prize, Selection Committee

2016.7-2018.3 Member of Board of Reviewing Editors, Science

2017.5-2022.4 EGU, Beno Gutenberg Medal, Selection Committee (Chair in 2021)

2018.1-2018.12 Task Force Committee for “Science Dream Roadmap”, Chair (JpGU Solid Earth Sciences Section Board)

2018.7-2019.6 Kyoto Prize, Member of Kyoto Prize Committee (Basic Sciences)

(Governmental services)

1999.4-2001.3 Grants-in-Aid for Scientific Research, JSPS, Reviewing Committee

2008.4-2010.3 Grants-in-Aid for Scientific Research, JSPS, Science-Engineering Review Panel

2012.12-2013.3 Grants-in-Aid for Scientific Research, Japan Society for the Promotion of Science (JSPS), Member of Math-Physics Review Panel

2016.7-2017.6 Japan Society for the Promotion of Science (JSPS), Member of Selection Committee for Research Fellowship

Recent International Invited Presentations

2011.6 Gordon Conference on Interior of the Earth: “*Seismological views on the oceanic asthenosphere and the LAB above*”

2012.12 AGU Fall meeting: “*Significance of radial seismic anisotropy of the oceanic asthenosphere inferred from sub-slab shear-wave splitting observations*”

2013.1 Crystal2Plate Fourth Workshop: “*Seismological constraints on the nature of the oceanic asthenosphere*”

2013.10 IRIS Ocean Bottom Seismograph Workshop: “*Toward in-situ Characterization of Lithosphere/Asthenosphere System of the “Normal Oceanic” Mantle: The NOMan Project*”

2013.11 College de France workshop: “*Toward in-situ Characterization of Lithosphere/Asthenosphere System of “Normal Oceanic” Mantle*”

2013.12 AGU Fall meeting: “*In-situ characterization of the lithosphere/asthenosphere system of the “normal oceanic” mantle via ocean bottom geophysical observations: first results of the NOMan project*”

2014.6 Sollas lecture, University of Bristol: “*Elucidation of the lithosphere/asthenosphere system via Broadband Ocean Bottom Seismology*”

2014.6 IRIS Workshop: “*Hi-net is great! ”*

2014.9 Topo-Europe 2014: “*Seismic imaging of the Pacific slab beneath Japan and northeast China: deep water transportation and enigma of the off-arc volcanism*”

2014.10 IRIS Amphibious Array Facility Workshop: “*Pacific Array*”

2015.5 JpGU 2015: “*Where have all the slabs gone in the Northwestern Pacific subduction zones? ”*

2016.4 EGU 2016: “*A new fifth parameter for transverse isotropy*”

2016.5 Seismix 2016: “*Elucidation of the lithosphere/asthenosphere system of “normal” oceanic mantle via broadband ocean bottom seismology*” (Keynote)

2016.12 AGU Fall meeting: *“Pacific Array of, by and for Global Deep Earth Research”*

2017.4 EGU 2017: Beno Gutenberg Medal Lecture: *“A journey to the seismic low velocity zone beneath the ocean”*

2018.11 New Advances of Geophysics meeting by British Geophysical Association on the future of passive seismic acquisition : *“Elucidation of the lithosphere-asthenosphere system of oceanic mantle via broadband ocean bottom seismology - Pacific Array”*

2018.11 Oxford University : *“Elucidation of the lithosphere-asthenosphere system of the oceanic mantle via broadband ocean bottom seismology”*

2019.12 AGU Fall meeting: *“Unraveling Earth Interior from the Ocean”* (AGU Centennial - Earth Interior session); *“New progress in building Pacific Array: an international collaboration to image mantle dynamic processes across the Pacific basin”* (Structure and Evolution of the Oceanic Lithosphere and Mantle session)

2020.1 Indian Institute of Geomagnetism (IIG): *“Building an observational network in the ocean - Pacific Array-”*

2021.5.20 IES colloquium (Taipei, online): *“Elucidating the plate evolution via broadband ocean bottom seismology: Pacific Array”*

2021.5.28 Pacific Array Workshop (Asia, Europe, US, online): *“Overview of the Pacific Array”*

Recent International Meeting Organization

2001.1.21-27 OHP/ION Joint Symposium on ”LONG-TERM OBSERVATIONS IN THE OCEANS: CURRENT STATUS AND PERSPECTIVES FOR THE FUTURE” (Yamanaka lake)

2009.2.25-27 Deep Slab and Mantle Dynamics (Kyoto)

2013.3.4-5 International Workshop on the “Normal Oceanic Mantle” (Tokyo)

2013.9.23-27 International Summer School on Earthquake Science: “Diversity of Earthquakes” (Hakone)

2015.3.3-6 Symposium: “Structure and Dynamics of the Oceanic Lithosphere/Asthenosphere System” (Matusima)

2015.9.4-8 The 3rd international summer school on Earthquake Science: “Monitoring physical properties associated with tectonic processes” (Yamanaka lake)

2017.4.13-14 Two-country joint seminar (JSPS-NRF): “Collaborative research in global ocean and subduction -toward Pacific Array-” (Seoul)

2017.5.26 post JpGU workshop: “Ocean Mantle Dynamics via Pacific Array” (Tokyo)

2020.3.2-8 36th International Geological Congress (IGC), Theme coordinator for Theme “Imaging Earth’s Interior” (Delhi, postponed to 2021)

Publication:

(*student/**post-doctoral advisee when work conducted initially; being project †PI/‡Co-PI; #un-refereed)

1. **Kawakatsu, H.** and R. J. Geller (1981), A new iterative method for finding the normal modes of a laterally heterogeneous body, *Geophys. Res. Lett.*, *8*, 1195-1197.
2. **Kawakatsu, H.** (1983), Can 'pure-path' models explain free oscillation data?, *Geophys. Res. Lett.*, *10*, 186-189.
3. **Kawakatsu, H.** and T. Seno (1983), Triple seismic zone and the regional variation of seismicity along the northern Honshu arc, *J. Geophys. Res.*, *88*, 4215-4230.
4. **Kawakatsu, H.** (1985), Double seismic zone in Tonga, *Nature*, *316*, 53-55.
5. **Kawakatsu, H.** (1986), Double seismic zones: kinematics, *J. Geophys. Res.*, *91*, 4811-4825.
6. **Kawakatsu, H.** (1986), Downdip tensional earthquakes beneath the Tonga arc: a double seismic zone ? *J. Geophys. Res.*, *91*, 6432-6440.
7. Morris, S. P., R. J. Geller, **H. Kawakatsu**, and S. Tsuboi (1987), Variational free oscillation computations for three laterally heterogeneous earth models, *Phys. Earth Planet. Int.*, *47*, 288-318.
8. **Kawakatsu, H.** (1989), Centroid single force inversion of seismic waves generated by land slides, *J. Geophys. Res.*, *94*, 12363-12374.
9. Honda, S., **H. Kawakatsu**, and T. Seno (1990), The depth of the October 1981 off Chile outer-rise earthquake (Ms=7.2) estimated by a comparison of several waveform inversion methods, *Bull. Seismol. Soc. Am.*, *80*, 69-87.
10. Kuge, K., and **H. Kawakatsu** (1990), Analysis of a deep "non-double couple" earthquake using very broadband data, *Geophys. Res. Lett.*, *17*, 227-230.
11. Kuwahara, Y., H. Ito, M. Shinohara, and **H. Kawakatsu** (1990), Small-array observation of seismic coda waves in Izu-Oshima -Analysis of coda waves from artificial explosions and from a natural intermediate-depth earthquake- (in Japanese), *Zisin*, *43*, 359-371.
12. **Kawakatsu, H.** (1990), CMT solution of the Izu-Oshima-Kinkai earthquake of January 14, 1978 (in Japanese), *Zisin*, *43*, 447-450.
13. **Kawakatsu, H.** (1991), Insignificant isotropic component in the moment tensor of deep earthquakes, *Nature*, *351*, 50-53.
14. **Kawakatsu, H.** (1991), Enigma of earthquakes at ridge-transform-fault plate boundaries - distribution of non-double couple parameter of Harvard CMT solutions, *Geophys. Res. Lett.*, *18*, 1103-1106.
15. **Kawakatsu, H.** (1991), Earthquake size and varieties determined by moment tensor inversions (in Japanese), *Zisin*, *44*, 265-277.
16. **Kawakatsu, H.**, and *G. P. Cadena (1991), Focal mechanisms of the March 6, 1987 Ecuador earthquakes - CMT inversion with a first motion constraint, *J. Phys. Earth*, *39*, 589-597.
17. **Kawakatsu, H.**, T. Ohminato, H. Ito, Y. Kuwahara, T. Kato, K. Tsuruga, S. Honda, and K. Yomogida (1992), Broadband seismic observation at the Sakurajima volcano, Japan, *Geophys. Res. Lett.*, *19*, 1959-1962.

18. Kuge, K., and **H. Kawakatsu** (1992), Deep and intermediate-depth non-double couple earthquakes: interpretation of moment tensor inversions using very broadband seismic waves, *Geophys. J. Int.*, *111*, 589-606.
19. Kuge, K., and **H. Kawakatsu** (1993), Significance of non-double couple components of deep and intermediate-depth earthquakes: implication from moment tensor inversions of various long-period seismic waves, *Phys. Earth Planet. Int.*, *75*, 243-266.
20. **Kawakatsu, H.**, T. Ohminato, and H. Ito (1994), 10s-period volcanic tremors observed over a wide area in southwestern Japan, *Geophys. Res. Lett.*, *21*, 1963-66.
21. **Kawakatsu, H.**, and *F. Niu (1994), Seismic Evidence for a 920km discontinuity in the mantle, *Nature*, *371*, 301-305.
22. *Niu, F., and **H. Kawakatsu** (1995), Direct evidence of the undulation of the 660-km discontinuity beneath Tonga: comparison of Japan and US regional array data *Geophys. Res. Lett.*, *22*, 531-534.
23. **Hara, T., K. Kuge, and **H. Kawakatsu** (1995), Determination of the isotropic component of the 1994 Bolivia deep earthquake, *Geophys. Res. Lett.*, *22*, 2265-2268.
24. **Kawakatsu, H.** (1995), Automated near-realtime CMT inversion, *Geophys. Res. Lett.*, *22*, 2569-2572.
25. **Kawakatsu, H.** (1996), On the observability of the isotropic component of a moment tensor, *Geophys. J. Int.*, *126*, 525-544.
26. Kaneshima, S., †**H. Kawakatsu**, *H. Matsubayashi, Y. Sudo, T. Tutui, T. Ohminato, H. Ito, K. Uhira, H. Yamasato, J. Oikawa, M. Takeo, T. Iidaka (1996), Mechanism of Phreatic Eruptions at Aso Volcano Inferred from Near-Field Broadband Seismic Observations, *Science*, *273*, 642-645.
27. **Hara, T., K. Kuge, and **H. Kawakatsu** (1996), Determination of the isotropic component of deep focus earthquakes by inversion of normal mode data, *Geophys. J. Int.*, *127*, 515-528.
28. *Niu, F., and **H. Kawakatsu**, (1996), Complex structure of the mantle discontinuities at the tip of the subducting slab beneath the northeast China: a preliminary investigation of broadband receiver functions, *J. Phys. Earth*, *44*, 701-711.
29. *Niu, F., and **H. Kawakatsu**, (1997), Depth variation of the mid-mantle seismic discontinuity, *Geophys. Res. Lett.*, *24*, 429-432.
30. Tsuruga, K., K. Yomogida, S. Honda, H. Ito, T. Ohminato, and **H. Kawakatsu**, (1997), Spatial and temporal variations of volcanic earthquakes at Sakurajima volcano, Japan, *J. Vol. Geothermal Res.*, *75*, 337-358.
31. Kuwahara, Y., H. Ito, **H. Kawakatsu**, T. Ohminato, and T. Kiguchi, (1997), Crustal heterogeneity as inferred from seismic coda wave decomposition by small-aperture array observation, *Phys. Earth Planet. Int.*, *104*, 247-256, 1997.
32. *Yamamura, K., and **H. Kawakatsu**, (1998), Normal mode solutions for radiation boundary conditions with an impedance contrast, *Geophys. J. Int.*, *134*, 849-855.
33. *Niu, F., and **H. Kawakatsu**, (1998), Determination of the absolute depths of the mantle transition zone discontinuities beneath China: Effect of the stagnant slabs on the mantle transition zone discontinuities, *Earth, Planets, and Space (OHP special issue)*, *50*, 965-975.
34. Vinnik, L., *F. Niu, and **H. Kawakatsu**, (1998), Broad-band converted phases from midmantle discontinuities, *Earth, Planets, and Space (OHP special issue)*, *50*, 987-997.

35. #**Kawakatsu, H.**, (1998), On the realtime monitoring of the long-period wavefield, *Bull. Earthquake. Res. Inst.*, 73, 267-274.
36. *Yamamoto, M., †**H. Kawakatsu**, S. Kaneshima, T. Mori, T. Tutui, Y. Sudo, Y. Morita (1999), Detection of a crack-like conduit beneath the active crater at Aso volcano, Japan, *Geophys. Res. Lett.*, 26, 3677-3680.
37. #*Yamamoto, M., †**H. Kawakatsu**, S. Kaneshima, T. Iidaka, J. Oikawa, S. Watada, Y. Morita, T. Mori, T. Tsutsui, Y. Sudo, M. Yoshikawa, T. Hashimoto, M. Nakabo (1999), ASOBOI97: Aso Seismic Observation with BrOadband Instruments in 1997, *Bull. Earthquake Res. Inst.*, 74, 267-285.
38. †**Kawakatsu, H.**, S. Kaneshima, *H. Matsubayashi, T. Ohminato, Y. Sudo, T. Tutui, K. Uhira, H. Yamasato, H. Ito, **D. Legrand (2000), Aso-94: Aso seismic observation with broadband instruments, *J. Vol. Geothermal Res.*, 101, 129-154.
39. **Legrand, D., S. Kaneshima, †**H. Kawakatsu**, (2000), Moment tensor analysis of near field broadband waveforms observed at Aso volcano, *J. Vol. Geothermal Res.*, 101, 155-169.
40. **Kato, M, *M. Misawa, **H. Kawakatsu** (2001), Small Subsidence of the 660-km Discontinuity Beneath Japan Probed By ScS Reverberations, *Geophys. Res. Lett.*, 28 , 447-450.
41. **Kato, M, and **H. Kawakatsu** (2001), Seismological in situ Estimation of Density Jumps across the Transition Zone Discontinuities beneath Japan, *Geophys. Res. Lett.*, 28, 2541-2544.
42. Vinnik, L., **M. Kato, **H. Kawakatsu** (2001), Search for seismic discontinuities in the lower mantle, *Geophys. J. International*, 147, 41-56.
43. **Kawakatsu, H.**, and C. R. Bina (2001), The Great Kanto Earthquake and F. Scott Fitzgerald, *EOS, Transactions, American Geophysical Union*, 82, 577.
44. *Yamamoto, M., **H. Kawakatsu**, K. Yomogida, J. Koyama (2002), Long-period (12sec) volcanic tremor observed at Usu 2000 eruption: Seismological detection of a deep magma plumbing system, *Geophys. Res. Lett.*, 29 , 43-1 - 43-4.
45. **Kawakatsu, H.** (2002), On the realtime monitoring of the long-period seismic wavefield, in *Methods and applications of signal processing in seismic network operations*, edited by T. Takanami and G. Kitagawa, Springer, 266pp, 251-257.
46. Niu, F., **H. Kawakatsu**, and Y. Fukao (2003), Seismic evidence for a chemical heterogeneity in the mid-mantle: a strong and slightly dipping seismic reflector beneath the Mariana subduction zone, *J. Geophys. Res.*, 108(B9), 2419, doi:10.1029/2002JB002384.
47. Matsubara, W, K. Yomogida, J. Koyama, M. Kasahara, M. Ichiyanagi, **H. Kawakatsu**, *M. Yamamoto (2004), Distribution and characteristics in waveform and spectrum of seismic events associated with the 2000 eruption of My. Usu, *J. Vol. Geothermal Res.*, 136, 141-158.
48. Ramesh, D. S., **H. Kawakatsu**, S. Watada, X. Yuan (2005), Receiver Function Images of the Central Chugoku Region in the Japanese Islands using Hi-net data, *Earth, Planets, and Space*, 57, 271-280..
49. Vanacore, E., F. Niu, **H. Kawakatsu**, (2006), Observations of the mid-mantle discontinuity beneath Indonesia from S to P converted waveforms, *Geophys. Res. Lett.*, 33, L04302, doi:10.1029/2005GL025106.
50. Takagi, N., S. Kaneshima, †**H. Kawakatsu**, M. Yamamoto, Y. Sudo, T. Ohkura, S. Yoshikawa, T. Mori (2006), Apparent migration of tremor source synchronized with the change in the tremor amplitude observed at Aso volcano, Japan, *J. Vol. Geothermal Res.*, 154, 181-200.

51. **Kawakatsu, H.**, (2006), Sharp and Seismically Transparent Inner Core Boundary Region Revealed by an Entire Network Observation of Near-vertical PKiKP, *Earth, Planets, and Space*, 58, 855-863.
52. **Kawakatsu, H.**, and S. Watada, (2007), Seismic evidence for deep water transportation, *Science*, 316, 1468-1471.
53. **Kawakatsu, H.**, M. Yamamoto (2007), Volcano Seismology, Schubert, G. (ed.) *Treatise on Geophysics*, Volume 4 pp389-420, Oxford: Elsevier.
54. *Kazama, T., **Kawakatsu, H.**, N. Takeuchi, (2008), Depth-dependent attenuation structure of the inner core inferred from short-period Hi-net data, *Phys. Earth Planet. Int.*, 167, 155-160.
55. **Shen, Xuzhang, Huilan Zhou, and **H. Kawakatsu** (2008), Mapping the upper mantle discontinuities beneath China with teleseismic receiver functions , *Earth Planets Space*, 60, 713-719.
56. *Yamamoto, M., **H. Kawakatsu** (2008), An efficient method to compute the dynamic response of a fluid-filled crack, *Geophys. J. Int.*, 174, 1174-1186.
57. Nishida, K., **H. Kawakatsu**, K. Obara, (2008), Three-dimensional crustal S-wave velocity structure in Japan using microseismic data recorded by Hi-net tiltmeters, *J. Geophys. Res.*, 113, B10302, doi:10.1029/2007JB005395.
58. Nishida, K., **H. Kawakatsu**, Y. Fukao, K. Obara (2008), Background Love and Rayleigh waves simultaneously generated at the Pacific Ocean floors, *Geophys. Res. Lett.*, 35, L16307, doi:10.1029/2008GL034753.
59. **Kawakatsu, H.**, J.-P. Montagner (2008), Time-reversal seismic-source imaging, moment-tensor inversion, *Geophys. J. Int.*, 175, 686-688.
60. **Shito, A., H. Shiobara, H. Sugioka, A. Ito, Y. Takei, **H. Kawakatsu**, T. Kanazawa (2009), Seismic property and the implication in the Izu-Bonin subduction zone inferred from BBOBS data, *J. Geophys. Res.*, 114, B03308, doi:10.1029/2007JB005568.
61. Isse, T., H. Shiobara, Y. Tamura, D. Suetsugu, K. Yoshizawa, H. Sugioka, A. Ito, M. Shinohara. K. Mochizuki, E. Araki. K. Nakahigashi, **H. Kawakatsu**, A. Shito, T. Kanazawa, Y. Fukao, O. Ishizuka, J. B. Gill (2009), Seismic structure of the upper mantle beneath the Philippine Sea from seafloor and land observation: implications for mantle convection and magma genesis in the Izu-Bonin-Mariana subduction zone *Earth Planet Science Lett.*, 278, 107-119.
62. Tsuruoka, H. , **H. Kawakatsu**, & T. Urabe (2009), GRiD MT: Grid-based Realtime Determination of Moment Tensors monitoring the long-period seismic wavefield, *Phys. Earth Planet. Int.*, special issue on "Earthquakes in subduction zones: a multidisciplinary approach", 278, 107-119.
63. **Kawakatsu, H.**, **P. Kumar, Y. Takei, M. Shinahara, Kanazawa, Araki, K. Suyehiro (2009), Seismic evidence for sharp lithosphere-asthenosphere boundaries of oceanic plates, *Science*, 324, 499-502.
64. **Bai, L., T. Iidaka, **H. Kawakatsu**, M. Morita, N.Q. Dzung (2009), Upper mantle anisotropy beneath Indochina block and adjacent regions from shear-wave splitting analysis of Vietnam seismograph array data, *Phys. Earth Planet. Int.*, 176, 33-43.
65. Takagi, N., S. Kaneshima, T. Ohkura, M. Yamamoto, †**H. Kawakatsu** (2009), Secular variation of the shallow tremor sources at Aso volcano from 1999 to 2003, *J. Vol. Geothermal Res.*, 184, 333-346.
66. Nishida, K., J-P. Montagner, and **H. Kawakatsu** (2009), Global Surface Wave Tomography Using Seismic Hum, *Science*, 326, 112.

67. *Takeo, A., **K. Idehara, *R. Iritani, **T. Tonegawa, *Y. Nagaoka, K. Nishida, †**H. Kawakatsu**, S. Tanaka, K. Miyakawa, T. Iidaka, M. Obayashi, H. Tsuruoka, K. Shiomi, and K. Obara (2010), Very broadband analysis of a swarm of very low frequency earthquakes and tremors beneath Kii Peninsula, SW Japan, *Geophys. Res. Lett.*, 37, L06311, doi:10.1029/2010GL042586.
68. *Iritani, R., N. Takeuchi and **H. Kawakatsu** (2010), Seismic attenuation structure of the top half of the inner core beneath the northeastern Pacific, *Geophys. Res. Lett.*, 37, L19303, doi:10.1029/2010GL044053.
69. Bina, Craig R., and **H. Kawakatsu** (2010) Buoyancy, Bending, and Seismic Visibility in Deep Slab Stagnation, *Phys. Earth Planet. Int.*, 183, 330-340.
70. Suetsugu, D., T. Inoue, M. Obayashi, A. Yamada., H. Shiobara, H. Sugioka, A. Ito, T. Kanazawa, **H. Kawakatsu**, A. Shito, Y. Fukao (2010), Depths of the 410-km and 660-km discontinuities in and around the stagnant slab beneath the Philippine Sea: Is water stored in the stagnant slab?, *Phys. Earth Planet. Int.*, 183, 270-279.
71. **Bai, L., **H. Kawakatsu**, M. Morita (2010), Two anisotropic layers in the central orogenic belt of the north China craton, *Tectonophysics*, 494, 138-148.
72. Reynard, B., J. Nakajima, and **H. Kawakatsu** (2010), Shearing of anhydrous slab mantle in double Wadati-Benioff zones, *Geophys. Res. Lett.*, 37, L24309, doi:10.1029/2010GL045494.
73. **Kumar, P., and **H. Kawakatsu** (2011), Imaging the seismic lithosphere-asthenosphere boundary of the oceanic plate, *G-cubed*, 12, Q01006, 1-13.
74. **Kawakatsu, H.** and S. Yoshioka (2011), Meta-stable olivine wedge and deep dry cold slab beneath SW Japan, *Earth Planet Science Lett.*, 303, 1-10.
75. Becker, T. W., and **H. Kawakatsu** (2011), On the role of anisotropic viscosity for plate-scale flow, *Geophys. Res. Lett.*, 38, L17307, doi:10.1029/2011GL048584.
76. **Kumar, P., **H. Kawakatsu**, M. Shinahara, Kanazawa, Araki, K. Suyehiro (2011), P and S-receiver function analysis of seafloor borehole broadband seismic data, *J. Geophys. Res.*, 116, B , doi:10.1029/2011JB008506.
77. **#Kawakatsu, H.** (2012), At the bottom of the oceanic plate (Perspective), *Science*, 335, 1448-1449.
78. Montagner, J.-P., C. Larmat, Y. Capdeville, M. Fink, H. Phung, B. Romanowicz, E. Clevede, and **H. Kawakatsu** (2012), Time Reversal Method and Cross-Correlation techniques by normal mode theory: a 3-point problem, *Geophys. J. Int.*, 191, 637-652. .
79. Song, T.-R. A., and **H. Kawakatsu** (2012), Subduction of oceanic asthenosphere: evidence from sub-slab seismic anisotropy, *Geophys. Res. Lett.*, 39, L17301, doi:10.1029/2012GL052639.
80. Guilhem, A., D. Dreger, H. Tsuruoka, and **H. Kawakatsu** (2013), Moment tensors for rapid characterization of megathrust earthquakes: the example of the 2011 M9 Tohoku-oki, Japan earthquake *Geophys. J. Int.*, 192, 759-772.
81. Song, T.-R. A., and **H. Kawakatsu** (2013), Subduction of oceanic asthenosphere: a critical appraisal in central Alaska, *Earth Planet Science Lett.*, 367, 82-94.
82. **Tonegawa, T., *R. Iritani, and **H. Kawakatsu** (2013), Extraction of Moho-generated phases from vertical and radial receiver functions of seismic array, *Bull. Seismol. Soc. Am.*, 103, 2011-2024, doi: 10.1785/0120120295.

83. *Takeo, A., K. Nishida, T. Isse, **H. Kawakatsu**, H. Shiobara, H. Sugioka, and T. Kanazawa (2013), Seismic radial anisotropy beneath the Shikoku Basin in the Philippine Sea from broadband array analysis of surface waves on sea floor record, *J. Geophys. Res.*, 118, doi:10.1002/jgrb.50219.
84. Lee, S.-J., H.-W. Cheng, F.-S. Tu, K.-F. Ma, H. Tsuruoka **H. Kawakatsu**, B.-S. Huang and C.-C. Liu (2014), Toward real-time regional earthquake simulation I: Real-time Moment Tensor monitoring (RMT) for regional events in Taiwan, *Geophys. J. Int.*, doi: 10.1093/gji/ggt371.
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(updated, January 14, 2025)