Ryo Okuwaki

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Positions

International Tenure Track assistant professor 06/2019–Present
University of Tsukuba

Visiting Professor 03/2020–03/2022
University of Leeds / Mentor: Tim Wright

Cooperative Research Fellow 09/2019–03/2020
Geological Survey of Japan, AIST

Visiting Scholar 09/2019–12/2019
Florida State University / Mentor: Wenyuan Fan

Research Fellow (PD) 04/2019–06/2019
Japan Society for the Promotion of Science
Geological Survey of Japan, AIST / Mentor: Takahiko Uchide

Research Fellow (DC1) 04/2016–03/2019
Japan Society for the Promotion of Science
University of Tsukuba / Mentor: Yuji Yagi

Visiting Scholar 09/2016–10/2016
University of California, Los Angeles / Mentor: Lingsen Meng

Grants

JSPS Grant-in-Aid for Scientific Research(C) (Co-PI) 2021-04-01 – 2025-03-31
Development of geodetic data analysis and viscoelasticity data assimilation toward robust detection and forcast of postseismic deformation (21K03694)
Budget amount: 4,160,000 JPY (Direct cost: 3,200,000 JPY, Indirect cost: 960,000 JPY)

JSPS Grant-in-Aid for Early-Career Scientists (PI) 2020-04-01 – 2024-03-31
Unraveling unconventional seismic sources using dense seismic arrays (20K14570)
Budget amount: 3,770,000 JPY (Direct cost: 2,900,000 JPY, Indirect cost: 870,000 JPY)

Grant-in-Aid for JSPS Fellows (PI) 2019-04-01 – 2022-03-31*
Rupture evolution during the mega and large earthquakes resolved by multi-scale source analyses (19J00814)
Budget amount: 4,420,000 JPY (Direct cost: 3,400,000 JPY, Indirect cost: 1,020,000 JPY)
*Budgets for FY2020 and FY2021 have been declined due to resignation of JSPS fellow to accept tenure-track position at University of Tsukuba

Grant-in-Aid for JSPS Fellows (PI) 2016-04-01 – 2019-03-31
Irregular rupture evolution during the large/great earthquakes: resolved by high-frequency radiation sources and co-seismic slip distribution (16J00298)
Budget amount: 2,500,000 JPY (Direct cost: 2,500,000 JPY, Indirect cost: 0 JPY)

Young Researcher Travel Support 2018
10th ACES (APEC Cooperation for Earthquake Science) International Workshop, Awaji Island Japan,

ACES

Travel Grant 2015
The 3rd international summer school on Earthquake Science, Lake-Yamanaka Japan, Earthquake Research Institute of the University of Tokyo and Southern California Earthquake Center

Travel Grant 2014
The 2014 VISES Summer School, Oxnard CA, Southern California Earthquake Center and Earthquake Research Institute of the University of Tokyo

Travel Grant 2014
The 2014 Annual Meeting of Seismological Society of America, Anchorage Ak, Seismological Society of Japan

Education

Ph.D. (Science), University of Tsukuba 03/2019
M.Sc. (Science), University of Tsukuba 03/2016
B.Sc. (Science), University of Tsukuba 03/2014

Awards

Excellent Reviewers for 2020, Earth, Planets and Space 2021
President Prize, University of Tsukuba 2019
Outstanding Student Presentation Award, JpGU Meeting 2018 2018
Outstanding reviewer, Earth and Planetary Science Letters 2018
Best Student Award, Doctoral Program in Earth Science Evolution, University of Tsukuba 2017
Outstanding Student Presentation Award, JpGU-AGU Joint Meeting 2017 2017
Best Poster Presentation Award, Tsukuba Global Science Week 2015 2015
Outstanding Student Presentation Awards, Seismol. Society of Japan 2014 Fall Meeting 2014
Outstanding Student Award (Provost Prize), University of Tsukuba 2014

Service

Journal referee (publons)
Earth and Planetary Science Letters, Earth, Planets and Space, Geophysical Journal International, Journal of Asian Earth Sciences, Journal of Geophysical Research - Solid Earth, Progress in Earth and Planetary Science, Physics of the Earth and Planetary Interiors, Pure and Applied Geophysics, Tectonophysics

Conference convener

- Co-convener 2022
  with Makiko Ohtani, Keishi Okazaki, and Shunya Kaneki
  JpGU Meeting 2022: Fault Rheology and Earthquake Physics
- Co-convener 2022
  with Saeko Kita
  JpGU Meeting 2022: Study abroad during the COVID-19 pandemic
- Co-convener 2020
  with Théa Ragon, Wenyuan Fan, and Dara Goldberg
  AGU Fall Meeting 2020, S036/S037/S042/S043: Modeling and imaging complex earthquake ruptures
- Co-convener 2019
  with Théa Ragon, Wenyuan Fan, and Harsha Bhat
  AGU Fall Meeting 2019, S42B/S51E: Resolving the complexity of earthquake processes
- Co-convener 2019
  with Saeko Kita, Tomohiro Ohuchi, and Marcel Thielmann
  JpGU Meeting 2019, S-CG50: Intraslab and intraplate earthquakes
- Primary convener 2018
  with Wenyuan Fan, Valére Lambert, and Zacharie Duputel
  AGU Fall Meeting 2018, S41A/S42A/S43C: Earthquake Source Physics: Unified perspectives from Kinematic Source Imaging, Physics-based Modeling, Laboratory Experiments, and Earthquake Geology

Organizer

- SOLIST (SOLId-earth Seminar of Tsukuba) seminar series 2021–
  https://www.geol.tsukuba.ac.jp/~rokuwaki/solist/

Affiliated societies American Geophysical Union (AGU), Japan Geoscience Union (JpGU), Seismological Society of America (SSA), Seismological Society of Japan (SSJ), Southern California Earthquake Center (SCEC)

Research interests
Geophysics
Seismology
Earthquake seismology
Earthquake-source kinematics and physics
Earthquake-source imaging (backprojection, finite-fault modeling)
Earth's subsurface phenomena
Environmental seismology
Array seismology

Invited talks
Envisioning the Future of Geophysics: A Celebration of the Centennial of the Seismological Laboratory, Caltech, Pasadena CA 2022
American Geophysical Union Fall Meeting 2021, S44C-04, New Orleans LA (online) 2021
Imperial College London, Earth and planets seminars, London UK (online) 2021
JpGU Meeting 2018, Session: Intraslab and intraplate earthquake, Chiba JP 2018
SCEC-ERI, The 3rd international summer school on Earthquake Science, Yamanashi JP 2015

Publications
Total citations: 725 (Google Scholar), 496 (Web of Science), 517 (Scopus)
h-index: 13 (Google Scholar), 11 (Web of Science), 12 (Scopus)
(†advisee)

30. Fan, W., Barbour, A. J., McGuire J. J., Huang, Y., Lin, G., Cochran, E. S., & **Okuwaki, R.**, Very low frequency earthquakes in between the seismogenic and tremor zones in Cascadia? (submitted).
29. Yamashita, S., Yagi, Y., **Okuwaki, R.**, Shimizu, K., Agata, R., & Fukahata, Y., Potency density tensor inversion of complex body waveforms with time-adaptive smoothing constraint (submitted).
    doi:10.31223/X5JW4V
28. **Okuwaki, R.**, & Fan, W., Oblique convergence causes both thrust and strike-slip ruptures during the 2021 M 7.2 Haiti earthquake (submitted).
    doi:10.31223/X5GG8M
27. Fan, W., **Okuwaki, R.**, Barbour, A. J., Huang, Y., Lin, G., & Cochran, E. S., Fast rupture of the 2009 Mw 6.9 Canal de Ballenas earthquake in the Gulf of California dynamically triggers seismicity in California (submitted).
26. Tadapansawut, T., Yagi, Y., **Okuwaki, R.**, Yamashita, Y., & Shimizu, K., Conjugate and bending faults drive the multiplex ruptures during the 2014 Mw 6.2 Thailand earthquake (submitted).
    doi:10.31223/X56P7T
25. **Okuwaki, R.**, Hicks, S. P., Craig, T. J., Fan, W., Goes, S., Wright, T. J., & Yagi, Y., Illuminating a Contorted Slab with a Complex Intraslab Rupture Evolution during the 2021 Mw 7.3 East Cape, New Zealand Earthquake, *Geophysical Research Letters*, 48, –, December 2021.
    doi:10.1029/2021GL095117
24. Hu, Y., Yagi, Y., **Okuwaki, R.**, & Shimizu, K., Back-propagating rupture evolution within a curved slab during the 2019 Mw 8.0 Peru intraslab earthquake, *Geophysical Journal International*, 223, 1602–1611, December 2021.
    doi:10.1093/gji/ggab303
23. **Okuwaki, R.**, Fan, W., Yamada, M., Osawa, H., & Wright, T. J., Identifying landslides from continuous seismic surface waves: a case study of multiple small-scale landslides triggered by Typhoon Talas, 2011, *Geophysical Journal International*, 226, 729–741, August 2021.
    doi:10.1093/gji/ggab129

22. Heidarzadeh, M., Pranantyo, I. R., **Okuwaki, R.**, Dogan, G. G., & Yalciner, A. C., Long tsunami oscillations following the 30 October 2020 Mw 7.0 Aegean Sea earthquake: Observations and modelling, *Pure and Applied Geophysics*, 178, 1531–1548, May 2021.
doi:10.1007/s00024-021-02761-8

21. Yamashita, S., Yagi, Y., **Okuwaki, R.**, Shimizu, K., Agata, R., & Fukahata, Y., Consecutive Ruptures on a Complex Conjugate Fault System During the 2018 Gulf of Alaska Earthquake, *Scientific Reports*, 11, 1–11, March 2021.
doi:10.1038/s41598-021-85522-w

20. Shimizu, K., Yagi, Y., **Okuwaki, R.**, & Fukahata, Y., Construction of fault geometry by finite-fault inversion of teleseismic data, *Geophysical Journal International*, 224, 1003–1014, February 2021.
doi:10.1093/gji/ggaa501

19. Tadapansawut, T.†, **Okuwaki, R.**, Yagi, Y., & Yamashita, S., Rupture Process of the 2020 Caribbean Earthquake along the Oriente Transform Fault, Involving Supershear Rupture and Geometric Complexity of Fault, *Geophysical Research Letters*, 48, 1–9, January 2021.
doi:10.1029/2020GL090899

18. **Okuwaki, R.**, Hirano, S., Yagi, Y., & Shimizu, K., Inchworm-like source evolution through a geometrically complex fault fueled persistent supershear rupture during the 2018 Palu Indonesia earthquake, *Earth and Planetary Science Letters*, 547, 116449 (1–8), October 2020.
doi:10.1016/j.epsl.2020.116449

17. Hicks, S., **Okuwaki, R.**, Steinberg, A., Rychert, C., Harmon, N., Abercrombie, R., Bogiatzis, P., Schlaphorst, D., Zahradník, J., Kendall, J.-M., Yagi, Y., Shimizu, K., & Sudhaus, H., Back-propagating supershear rupture in the 2016 Mw 7.1 Romanche transform fault earthquake, *Nature Geoscience*, 13, 647–653, September 2020.
doi:10.1038/s41561-020-0619-9

16. Takemura, S., **Okuwaki, R.**, Kubota, T., Shiomi, K., Kimura, T., & Noda, A., Centroid moment tensor inversions of offshore earthquakes using a three-dimensional velocity structure model: Slip distributions on the plate boundary along the Nankai Trough, *Geophysical Journal International*, 220, 1109–1125, August 2020.
doi:10.1093/gji/ggaa238

15. Aránguiz, R., Esteban, M., Takagi, H., Mikami, T., Takabatake, T., Gomez, M., Gonzalez, J., Shibayama, T., **Okuwaki, R.**, Yagi, Y., Shimizu, K., Achiari, H., Stolle, J., Robertson, I., Ohira, K., Nakamura, R., Nishida, Y., Krautwald, C., Goseberg, N., & Nistor, I., The 2018 Sulawesi tsunami in Palu city as a result of several landslides and coseismic tsunamis, *Coastal Engineering Journal*, 0, 1–15, June 2020.
doi:10.1080/21664250.2020.1780719

14. Shimizu, K., Yagi, Y., **Okuwaki, R.**, & Fukahata, Y., Development of an inversion method to extract information on fault geometry from teleseismic data, *Geophysical Journal International*, 220, 1055–1065, February 2020.
doi:10.1093/gji/ggz496

13. **Okuwaki, R.**, Kasahara, A., Yagi, Y., Hirano, S., & Fukahata, Y., Backprojection to image slip, *Geophysical Journal International*, 216, 1529–1537, March 2019.
doi:10.1093/gji/ggy505

12. Aránguiz, R., Urra, L., **Okuwaki, R.**, & Yagi, Y., Development and application of a tsunami fragility curve of the 2015 tsunami in Coquimbo, Chile, *Natural Hazards and Earth System Sciences*, 18, 2143–2160, August 2018.
doi:10.5194/nhess-18-2143-2018

11. **Okuwaki, R.**, & Yagi, Y., Role of geometric barriers in irregular-rupture evolution during the 2008 Wenchuan earthquake, *Geophysical Journal International*, 212, 1657–1664, March 2018.
doi:10.1093/gji/ggx502

10. **Okuwaki, R.**, & Yagi, Y., Rupture Process During the Mw 8.1 2017 Chiapas Mexico Earthquake: Shallow Intraplate Normal Faulting by Slab Bending, *Geophysical Research Letters*, 44, 11816–11823, December 2017.
doi:10.1002/2017GL075956

9. Miyakawa, A., Sumita, T., Okubo, Y., **Okuwaki, R.**, Otsubo, M., Uesawa, S., & Yagi, Y., Volcanic magma reservoir imaged as a low-density body beneath Aso volcano that terminated the 2016 Kumamoto earthquake rupture, *Earth, Planets and Space*, 68, 9 pages, December 2016.
   doi:10.1186/s40623-016-0582-2

8. Yagi, Y., **Okuwaki, R.**, Enescu, B., Kasahara, A., Miyakawa, A., & Otsubo, M., Rupture process of the 2016 Kumamoto earthquake in relation to the thermal structure around Aso volcano, *Earth, Planets and Space*, 68, 6 pages, July 2016.
   doi:10.1186/s40623-016-0492-3

7. **Okuwaki, R.**, Yagi, Y., Aránguiz, R., González, J., & González, G., Rupture Process During the 2015 Illapel, Chile Earthquake: Zigzag-Along-Dip Rupture Episodes, *Pure and Applied Geophysics*, 173, 1011–1020, April 2016.
   doi:10.1007/s00024-016-1271-6

6. Mai, P. M., Schorlemmer, D., Page, M., Ampuero, J., Asano, K., Causse, M., Custodio, S., Fan, W., Festa, G., Galis, M., Gallovic, F., Imperatori, W., Käser, M., Malytskyy, D., **Okuwaki, R.**, Pollitz, F., Passone, L., Razafindrakoto, H. N. T., Sekiguchi, H., Song, S. G., Somala, S. N., Thingbaijam, K. K. S., Twardzik, C., van Driel, M., Vyas, J. C., Wang, R., Yagi, Y., & Zielke, O., The Earthquake-Source Inversion Validation (SIV) Project, *Seismological Research Letters*, 87, 690–708, April 2016.
   doi:10.1785/0220150231

5. Aránguiz, R., González, G., González, J., Catalán, P. A., Cienfuegos, R., Yagi, Y., **Okuwaki, R.**, Urra, L., Contreras, K., Del Rio, I., & Rojas, C., The 16 September 2015 Chile Tsunami from the Post-Tsunami Survey and Numerical Modeling Perspectives, *Pure and Applied Geophysics*, 173, 333–348, February 2016.
   doi:10.1007/s00024-015-1225-4

4. Yagi, Y., & **Okuwaki, R.**, Integrated seismic source model of the 2015 Gorkha, Nepal, earthquake, *Geophysical Research Letters*, 42, 6229–6235, August 2015.
   doi:10.1002/2015GL064995

3. Yagi, Y., **Okuwaki, R.**, Enescu, B., & Fukahata, Y., Unusual low-angle normal fault earthquakes after the 2011 Tohoku-oki megathrust earthquake, *Earth, Planets and Space*, 67, 7 pages, June 2015.
   doi:10.1186/s40623-015-0271-6

2. **Okuwaki, R.**, Yagi, Y., & Hirano, S., Relationship between High-frequency Radiation and Asperity Ruptures, Revealed by Hybrid Back-projection with a Non-planar Fault Model, *Scientific Reports*, 4, 6 pages, November 2014.
   doi:10.1038/srep07120

1. Yagi, Y., **Okuwaki, R.**, Enescu, B., Hirano, S., Yamagami, Y., Endo, S., & Komoro, T., Rupture process of the 2014 Iquique Chile earthquake in relation with the foreshock activity, *Geophysical Research Letters*, 41, 4201–4206, June 2014.
   doi:10.1002/2014GL060274

Miscellaneous materials

- Hirano, S., & **Okuwaki, R.**, Note on "Backprojection to image slip", September 2020.
  doi:10.17605/osf.io/pb7hk