

## *Curriculum Vitae*

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## **Research Interest**

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- Physical mechanisms of volcanic earthquakes, particularly, associated to caldera structures.
- Numerical simulations of tsunami wave generation/propagation processes.
- Crustal deformation of earthquakes and volcanoes.
- Moment tensor inversion analysis of seismic waves.

## **Positions**

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2020.04 – Present	Research Fellow of Japan Society for the Promotion of Science (PD), Earthquake and Tsunami Research Division, National Research Institute for Earth Science and Disaster Resilience
2019.07 – 2019.09	Visiting Researcher at Seismological Laboratory, California Institute of Technology
2017.04 – 2020.03	Research Fellow of Japan Society for the Promotion of Science (DC1)

## **Education**

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2017.04 – 2020.03	Ph.D., Earthquake Research Institute, Department of Earth and Planetary Science, The University of Tokyo
2015.04 – 2017.03	M.S., Earthquake Research Institute, Department of Earth and Planetary Science, The University of Tokyo

## Publications

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### Published Articles

1. Lai, V. H., Z. Zhan, Q. Brissaud, **O. Sandanbata**, and M. S. Miller (2021). Inflation and Asymmetric Collapse at Kilauea Summit during the 2018 Eruption from Seismic and Infrasound Analyses, *Journal of Geophysical Research: Solid Earth*, In press: e2021JB022139, <https://doi.org/10.1029/2021JB022139>
2. **Sandanbata, O.**, H. Kanamori, L. Rivera, Z. Zhan, S. Watada, and K. Satake (2021). Moment tensors of ring-faulting at active volcanoes: Insights into vertical-CLVD earthquakes at the Sierra Negra caldera, Galápagos Islands, *Journal of Geophysical Research: Solid Earth*, 126(6), e2021JB021693: <https://doi.org/10.1029/2021JB021693>.
3. **Sandanbata, O.**, S. Watada, T-C. Ho, and K. Satake (2021). Phase delay of short-period tsunamis in the density-stratified compressible ocean over the elastic Earth, *Geophysical Journal International*, 226(3), 1975–1985, <https://doi.org/10.1093/gji/ggab192>.
4. Saito, T., T. Kubota, N. Y. Chikasada, Y. Tanaka, and **O. Sandanbata** (2021). Meteorological tsunami generation due to sea-surface pressure change: Three-dimensional theory and synthetics of ocean-bottom pressure change, *Journal of Geophysical Research: Oceans*, 126(5), e2020JC017011, <https://doi.org/10.1029/2020JC017011>.
5. Heidarzadeh, M., T. Ishibe, **O. Sandanbata**, A. Muhari, and A. B. Wijanarto (2020). Numerical modeling of the subaerial landslide source of the 22 December 2018 Anak Krakatoa volcanic tsunami, Indonesia, *Ocean Engineering*, 195, 106733, <https://doi.org/10.1016/j.oceaneng.2019.106733>
6. Wang, Y., K. Satake, **O. Sandanbata**, T. Maeda, and H. Su (2019). Tsunami data assimilation of cabled ocean bottom pressure records for the 2015 torishima volcanic tsunami earthquake, *Journal of Geophysical Research: Solid Earth*, 124(10), 10413-10422, <https://doi.org/10.1029/2019JB018056>
7. **Sandanbata, O.**, H. Shiobara, S. Kusumoto, H. J. Kim, A. Oba, Q. Liu, T. Ueda, M. Ogawa, K. Takano, I. Kotobuki, and Y. Wang (2018). Equipment of Miniature Instruments to Measure Tsunami Waves in an Experimental Tank (in Japanese), *Technical Research Report, Earthquake Research Institute, the University of Tokyo*, 24, 29-34, [http://www.eri.u-tokyo.ac.jp/GIHOU/archive/24\\_029-034.pdf](http://www.eri.u-tokyo.ac.jp/GIHOU/archive/24_029-034.pdf)
8. **Sandanbata, O.**, S. Watada, K. Satake, Y. Fukao, H. Sugioka, A. Ito, and H. Shiobara (2018). Ray Tracing for Dispersive Tsunamis and Source Amplitude Estimation Based on Green's Law: Application to the 2015 Volcanic Tsunami Earthquake Near Torishima, South of Japan, *Pure and Applied Geophysics*, 175, 1371–1385, <https://doi.org/10.1007/s00024-017-1746-0>.
9. Fukao, Y., **O. Sandanbata**, H. Sugioka, A. Ito, H. Shiobara, S. Watada, and K. Satake (2018). "Mechanism of the 2015 volcanic tsunami earthquake near Torishima, Japan." *Science advances* 4, no. 4, eaao0219, <https://doi.org/10.1126/sciadv.aao0219>.
10. **Sandanbata, O.**, K. Obara, T. Maeda, R. Takagi, and K. Satake (2015). Sudden changes in the amplitude-frequency distribution of long-period tremors at Aso volcano, southwest Japan, *Geophysical Research*

## Submitted manuscripts

1. Kubota, T., T. Saito, N. Y. Chikasada, and **O. Sandanbata**, Meteotsunami observed by the deep-ocean seafloor pressure gauge network off northeastern Japan, *under review* for publication from *Geophysical Research Letters*.

## Awards

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1. Student Presentation Award, Seismological Society of Japan Fall Meeting 2018, 2018.
2. Outstanding Student Presentation Award, JpGU Annual Meeting 2018, 2018.
3. Outstanding Student Presentation Award, JpGU-AGU Joint Meeting 2017, 2017.
4. Best Student Poster Award, Asia Oceania Geoscience Society 13th Annual Meeting, 2016.
5. Outstanding Student Presentation Award, JpGU Annual Meeting 2016, 2016.

## International Conference

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1. **Sandanbata, O.**, S. Watada, K. Satake, H. Kanamori, L. Rivera, and Z. Zhan (2020). Unexpectedly large tsunamis generated by submarine volcanic earthquakes: Evidence of trapdoor faulting at a submarine caldera, AGU 2020 Fall Meeting, V043-04, Online, December 2020.
2. Lai, V. H., **O. Sandanbata**, Z. Zhan, and M. S. Miller (2020). Seismic characterization of explosive and collapse events at the Kilauea summit during the 2018 eruption, AGU 2020 Fall Meeting, V002-0012, Online, December 2020.
3. **Sandanbata, O.**, S. Watada, K. Satake, H. Kanamori, L. Rivera, and Z. Zhan (2020). Volcanic tsunami earthquakes repeating at submarine calderas (1): Physical mechanism, JpGU-AGU Joint Meeting 2020, SVC45-36, Online, July 2020.
4. **Sandanbata, O.**, S. Watada, K. Satake, H. Kanamori, L. Rivera, and Z. Zhan (2020). Volcanic tsunami earthquakes repeating at submarine calderas (2): Kinematic source modeling of the 2015 Torishima earthquake, JpGU-AGU Joint Meeting 2020, HDS08-P07, Online, July 2020.
5. Wang, Y., **O. Sandanbata**, K., Satake, T. Maeda, and H. Su (2019). “Tsunami Data Assimilation of the 2015 Torishima Earthquake, AGU 2019 Fall Meeting, NH43F-0995, San Francisco, U.S., December 2019.
6. **Sandanbata, O.**, S. Watada, and K. Satake (2018). Abrupt large uplift caused by volcanic tsunami earthquakes near the Kermadec Islands, AGU 2018 Fall Meeting, NH33A-06, Washington, D.C, U.S., December 2018.
7. **Sandanbata, O.**, S. Watada, K. Satake, Y. Fukao, H. Sugioka, A. Ito, and H. Shiobara (2018). Tsunami Source Modeling for the 2015 Volcanic Tsunami Earthquake Near Torishima, South of Japan, AOGS 2018 Annual Meeting, IG03-D3-PM1-323A-015, Honolulu, U.S., June 2018.

8. **Sandanbata, O.**, S. Watada, K. Satake, Y. Fukao, H. Sugioka, A. Ito, and H. Shiobara (2017). Tsunami Source Modeling of the 2015 Volcanic Tsunami Earthquake near Torishima, South of Japan, AGU 2017 Fall Meeting, NH23A-0231, New Orleans, U.S., December 2017.
9. **Sandanbata, O.**, S. Watada, K. Satake, Y. Fukao, H. Sugioka, A. Ito, and H. Shiobara (2017). Ray tracing for dispersive tsunamis and estimation of initial sea-surface displacement: Application to the 2015 Smith Caldera earthquake, JpGU-AGU Joint Meeting 2017, HDS16-12, Chiba, Japan, May 2017.
10. **Sandanbata, O.**, S. Watada, K. Satake, Y. Fukao, H. Sugioka, A. Ito, and H. Shiobara (2016). 2015 volcanic tsunami earthquake near Torishima Island: Ray tracing analysis of dispersive tsunami wave, AGU 2016 Fall Meeting, NH43B-1838, San Francisco, U.S., December 2016.
11. **Sandanbata, O.**, S. Watada, K. Satake, Y. Fukao, H. Sugioka, A. Ito, and H. Shiobara (2016). 2015 Torishima Tsunami Earthquake: Ray Tracing Analysis Of Dispersive Tsunami Wave, AOGS 2016 Annual Meeting, OS22-SE37-D4-PM2-P-008, Beijing, China, August 2016.
12. **Sandanbata, O.**, K. Obara, T. Maeda, R. Takagi, and K. Satake (2015). Step-wise temporal change in the frequency-amplitude distribution of volcanic long period tremors at Aso volcano, Workshop ERI-IPGP, Paris, France, September 2015.

## Fellowships and Grants

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### Fellowship

1. Japan Society for the Promotion of Science (JSPS) Research fellow (PD), 2020.04 – Present.
2. Japan Society for the Promotion of Science (JSPS) Research fellow (DC1), 2017.04 – 2020.03.

### Grants

1. Grant-in-Aid for JSPS Fellows, 20J01689, 2020.04 – Present.
2. Grant-in-Aid for JSPS Fellows, 17J02919, 2017.04 – 2020.03.

## Thesis Titles

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<b>Ph.D.</b>	Physical mechanism of volcanic tsunami earthquakes repeating at submarine volcanoes. (Supervisor: Dr. Kenji Satake)
<b>M.S.</b>	Ray Tracing for Dispersive Tsunamis and Estimation of Initial Sea-surface Deformation from Array Data: Application to the 2015 Volcanic Tsunami Earthquake near Smith Caldera, South of Japan. (Supervisor: Dr. Kenji Satake)
<b>B.S.</b>	Step-wise changes in the amplitude-frequency distribution of long-period tremors at Aso volcano (in Japanese). (Supervisor: Dr. Kazushige Obara)

## Teaching Experiences

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2017.06 – 2017.07      Tutor for two international internship students of *University of Tokyo Research*

*Internship Program, The University of Tokyo.*

2017.04 – 2017.09	Teaching Assistant, <i>Seismic Wave Theory</i> , The University of Tokyo.
2016.09 – 2017.03	Mentor for an international student in master program, The University of Tokyo.
2016.06 – 2016.07	Tutor for two international internship students of <i>University of Tokyo Research Internship Program</i> , The University of Tokyo.
2015.06 – 2015.07	Tutor for two international internship students of <i>Sakura Science Plan</i> , Earthquake Research Institute, The University of Tokyo.
2014.11 – 2014.11	Tutor for three international internship students of <i>Sakura Science Plan</i> , Earthquake Research Institute, The University of Tokyo.
2014.04 – 2015.03	Teaching Assistant, <i>Basic Japanese Language</i> , The University of Tokyo.

## **Outreach Experiences**

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2015.08, 2016.08, and 2018.08

Open-laboratory experiment of tsunami generation/propagations in a miniature tank, Earthquake Research Institute, The University of Tokyo.