Kurama Okubo

National Research Institute for Earth Science and Disaster Resilience (NIED), Tsukuba, Japan
website: https://kura-okubo.github.io.
orcid: https://orcid.org/0000-0001-6453-8238.

EDUCATION

2018/11	**Ph.D.***	Earth Sciences, Environments and Planets **Institut de Physique du Globe de Paris, France**
2015/03	**M.E.**	Civil and Earth Resources Engineering **Kyoto University, Japan**
2014/06	**M.S.**	Earth Sciences, Environments and Planets **Institut de Physique du Globe de Paris, France**
2013/03	**B.E.**	Civil, Environmental and Resources Engineering **Kyoto University, Japan**

*Advisors: Prof. Harsha S. Bhat, Prof. Yann Klinger, and Prof. Esteban Rougier

RESEARCH EXPERIENCE

2026.01 - Present	Chief Researcher at **NIED, Japan**
2020.10 - 2025.12	Contract Researcher at **NIED, Japan**
2019.01 - 2020.09	Post-Doctoral Fellow at **EPS, Harvard University**
2016.05 - 2018.12	Working at **Laboratoire de Géologie, Ecole Normale Supérieure**
2017.10 - 2017.12	Research internship at **Los Alamos National Laboratory**
2016.11 - 2016.12	Research internship at **Los Alamos National Laboratory**

FUNDING & GRANTS

2022.04 - 2027.03	JSPS KAKENHI (Co-Investigator, Scientific Research (B), 23K22592)
2021.04 - 2025.03	JSPS KAKENHI (PI, Early-Career Scientists, 21K14020)
2015.10 - 2018.09	PhD fellowship: Contrats doctoraux Université Sorbonne Paris Cité 2015 (Volant International)

AWARDS

[1] 2026: EGU Division Outstanding Early Career Scientist Awards Seismology (SM) Division
[2] 2024: Technical Development Award from the Seismological Society of Japan (co-awarded)
[3] 2020: PhD Thesis Award from Comité National Français de Géodésie et Géophysique (CNFGG)
[4] 2018: EGU Outstanding Student Poster and PICO (OSPP) Awards Seismology (SM) Division

REFEREED PUBLICATIONS & PAPERS IN REVIEW

[1] Okubo, K., Yamashita, F. & Fukuyama, E. Dynamics of non-self-similar earthquakes illuminated by a controlled fault asperity, *in revision.* DOI: 10.21203/rs.3.rs-6553961/v1.

[2] Okubo, K., Delbridge, B. G. & Denolle, M. A. Monitoring Velocity Change Over 20 Years at Parkfield, *J. Geophys. Res.* DOI: 10.1029/2023jb028084 (2024).

[3] Takemura, S., Hamada, Y., Okuda, H., Okada, Y., Okubo, K., Akuhara, T., Noda, A. & Tonegawa, T. A review of shallow slow earthquakes along the Nankai Trough, *Earth, Planets and Space.* DOI: 10.1186/s40623-023-01920-6 (2023).

[4] Yang, X., Bryan, J., Okubo, K., Jiang, C., Clements, T. & Denolle, M. A. Optimal stacking of noise cross-correlation functions, *Geophys. J. Int.* DOI: 10.1093/gji/ggac410 (2022).

[5] Jara, J., Bruhat, L., Thomas, M. Y., Antoine, S. L., Okubo, K., Rougier, E., Rosakis, A. J., Sammis, C. G., Klinger, Y., Jolivet, R. & Bhat, H. S. Signature of transition to supershear rupture speed in the coseismic off-fault damage zone, *Proc. R. Soc. Lond. A.* DOI: 10.1098/rspa.2021.0364 (2021).

[6] Jones, J. P., Okubo, K., Clements, T. & Denolle, M. A. SeisIO: A Fast, Efficient Geophysical Data Architecture for the Julia Language, *Seismol. Res. Lett.* DOI: 10.1785/0220190295 (2020).

[7] Knight, E. E., Rougier, E., Lei, Z., Euser, B., Chau, V., Boyce, S. H., Gao, K., Okubo, K. & Froment, M. HOSS: an implementation of the combined finite-discrete element method, *Computational Particle Mechanics.* DOI: 10.1007/s40571-020-00349-y (2020).

[8] Okubo, K., Bhat, H. S., Rougier, E., Marty, S., Schubnel, A., Lei, Z., Knight, E. E. & Klinger, Y. Dynamics, Radiation, and Overall Energy Budget of Earthquake Rupture With Coseismic Off-Fault Damage, *J. Geophys. Res.* DOI: 10.1029/2019jb017304 (2019).

[9] Okubo, K. Dynamic earthquake ruptures on multiscale fault and fracture networks, PhD thesis (Institut de Physique du Globe de Paris, 2018).

[10] Klinger, Y., Okubo, K., Vallage, A., Champenois, J., Delorme, A., Rougier, E., Lei, Z., Knight, E. E., Munjiza, A., Satriano, C., *et al.* Earthquake damage patterns resolve complex rupture processes, *Geophys. Res. Lett.* DOI: 10.1029/2018gl078842 (2018).

REVIEWING ACTIVITIES

Journal of Geophysical Research: Solid Earth Tectonics Geophysical Research Letters Geophysical Journal International Computational Particle Mechanics Earth, Planets and Space Seismica Pure and Applied Geophysics Physical Review Letters Nature Nature Communications Scientific Reports

PRESENTATIONS

▸ Oral presentations

[1] Okubo, K., Yamashita, F., Matsumoto, Y. & Fukuyama, E. Fracture energy evaluation based on optimized estimation of rupture velocity on a 6-meter laboratory fault, **12th ACES International Workshop** (Taipei, Taiwan., 2025).

[2] Okubo, K., Yamashita, F. & Fukuyama, E. Non-self-similar scaling of laboratory earthquakes and their source mechanisms: recent progress with M-7 events, **Slow-to-Fast Earthquake Workshop in Chile** (Santiago, Chile., 2025).

[3] Okubo, K., Yamashita, F. & Fukuyama, E. Non-self-similarity of Laboratory Microearthquakes Generated by Controlled Gouge Patch **(invited)**, **AGU Fall Meeting** (Washington, D.C., USA, 2024).

[4] Okubo, K., Villafuerte, C., Rougier, E. & Bhat, H. S. Near-field strong pulse caused by the coseismic off-fault damage on the 2016 Kumamoto earthquake, **EARTHQUAKES 4th edition: Cargèse international workshop on earthquakes** (Cargèse, France, 2024).

[5] Okubo, K., Yamashita, F. & Fukuyama, E. Dynamic rupture modeling of non-self-similar seismic events generated by a controlled gouge patch, **International Joint Workshop on Slow-to-Fast Earthquakes** (Beppu, Oita, Japan, 2024).

[6] Okubo, K., Yamashita, F. & Fukuyama, E. Constraining Source Parameters of Seismic Events Generated by Circular Gouge Patches on 4-meter-long Laboratory Fault, **SSA Annual Meeting** (Anchorage, Alaska, USA, 2024).

[7] Okubo, K., Yamashita, F. & Fukuyama, E. Validation of Fiber Bragg Grating sensors for strain measurement on giant biaxial rock friction experiments, **JpGU Meeting** (Makuhari Messe, Chiba, Japan, 2024).

[8] Okubo, K., Yamashita, F. & Fukuyama, E. Foreshocks Generated by Simulated Gouge Patches on 4-meter-long Laboratory Fault, **AGU Fall Meeting** (San Francisco, CA, USA, 2023).

[9] Okubo, K., Carlos, V., Esteban, R. & Bhat, H. S. Dynamic earthquake ruptures and its radiations with off-fault fracture network in various spatial resolutions, **JpGU Meeting** (Makuhari Messe, Chiba, Japan, 2023).

[10] Okubo, K., Yamashita, F. & Fukuyama, E. Estimate the source properties of foreshocks that occurred during stick-slip experiments using the 4-meter-long biaxial rock friction apparatus **(invited)**, **AGU Fall Meeting** (Chicago, IL, 2022).

[11] Okubo, K., Yamashita, F. & Fukuyama, E. Estimation of source properties with foreshocks on a 4-meter-long laboratory fault using synthetic Green's function **(invited)**, **JpGU Meeting** (Makuhari Messe, Chiba, Japan, 2022).

[12] Okubo, K., Delbridge, B. G. & Denolle, M. A. Two decades continuous monitoring of seismic velocity change at Parkfield to identify its origins, **Joint Scientific Assembly IAGA-IASPEI 2021** (S4 CoSOI Seismic scattering, absorption, ambient noise, and monitoring Earth's structure, 2021).

[13] Okubo, K., Delbridge, B. G. & Denolle, M. A. Continuous monitoring of seismic velocity change at Parkfield towards identifying the strain accumulation, **JpGU Meeting** (2021).

[14] Okubo, K., Bhat, H. S., Rougier, E. & Denolle, M. A. Coseismic off-fault damage, its implications on the rupture dynamics, and building seismic observables, **Numerical Modeling of Earthquake Motions: Waves and Ruptures (NMEM)** (Smolenlce Castle, Slovakia, 2019).

[15] Okubo, K., Bhat, H. S. & Rougier, E. Dynamic earthquake ruptures with coseismic off-fault damage on finite faults and fault kinks, **EGU General Assembly Conference** (Vienna, Austria, 2019).

[16] Okubo, K., Bhat, H. S., Rougier, E., Lei, Z., Earl, K. E. & Klinger, Y. Dynamic fracture network around faults: implications for earthquake ruptures, ground motion and energy budget, **AGU Fall Meeting** (New Orleans, USA, 2017).

[17] Okubo, K., Bhat, H. S., Klinger, Y. & Rougier, E. Modeling dynamic earthquake rupture with coseismic off-fault damage, **IAG-IASPEI Symposia** (Kobe, Japan, 2017).

[18] Okubo, K., Bhat, H. S., Klinger, Y. & Rougier, E. Earthquake rupture modelling on complex fault systems and complex media, **6th International Conference on Coupled THMC Processes in Geosystems** (Paris, France, 2017).

[19] Okubo, K., Bhat, H. S., Klinger, Y. & Rougier, E. Modelling earthquake ruptures with dynamic off-fault damage, **EGU General Assembly Conference** (Vienna, Austria, 2017).

COMPUTER SKILLS

Languages & Software: C/C++, Fortran90/95, Julia, Python, Matlab, Cubit (Trelis).

LANGUAGES

English (Fluently), French (Basic), Japanese (Native).

Last Modified Thursday 1st January, 2026