

POST-GRADUATION EMPLOYMENT:**Assistant Professor (Dec 2017 to present)**

Asian School of the Environment | Earth Observatory of Singapore
Nanyang Technological University
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Past: Senior Research Fellow (Jul 2013 to Dec 2017); Research Fellow (Feb 2010 to Jun 2013)
Earth Observatory of Singapore | Nanyang Technological University

EDUCATION:

- Doctor of Philosophy in Geology, California Institute of Technology, 2010
- Master of Science (Geological Sciences), San Diego State University, 2006
- Bachelor of Science with honor (Geology), California Institute of Technology, 2000

PRIMARY RESEARCH INTERESTS:

- neotectonics, paleoseismology, paleogeodesy, and tectonic geomorphology
- earthquake recurrence, rupture repeatability, fault segmentation, and fault interactions
- temporal variability in interseismic deformation and strain accumulation
- Holocene relative sea-level change and glacial isostatic adjustment

SELECTED AWARDS AND HONORS:

- 2015 Exceptional Reviewer for *Geosphere*
- 2007 recipient of the Outstanding Student Paper Award, Seismology Section, American Geophysical Union Fall Meeting, December 2007, San Francisco, CA
- 2006 recipient of the Outstanding Student Presentation Award, Seismological Society of America Annual Meeting, April 2006, San Francisco, CA
- 2005 recipient of the Outstanding Student Presentation Award, Seismological Society of America Annual Meeting, April 2005, Incline Village, NV
- 2003–2004 recipient of the Special Institute Fellowship in the Division of Geological and Planetary Sciences at Caltech
- National Science Foundation (NSF) Graduate Research Fellowship
2002 Honorable Mention awardee
- recipient of various awards and scholarships in the Department of Geological Sciences at SDSU, 2001–2003
- winner of the 2000 Deans' Cup award (at Caltech), in recognition of efforts to improve the quality of undergraduate life at Caltech and to establish lines of communication with members of the faculty and administration; accompanied by a \$200 prize
- 1999–2000 recipient of the Ian Campbell Award in Geology (at Caltech), for outstanding performance in field geology courses during the 1999–2000 academic year; accompanied by the award of a Brunton Compass
- 1998–1999 recipient of the Fritz Burns Prize in Geology (at Caltech), in recognition of one's potential to make a significant contribution in the earth sciences through research; accompanied by a \$2500 grant to support ongoing research

ADVISING AND TEACHING:

- Co-advised a post-doc at the Earth Observatory of Singapore (EOS) at NTU, 2017–present
- Co-advised 3 PhD students in the Asian School of the Environment (ASE) at NTU, 2012–present
- Co-advised a post-undergraduate research assistant interning at EOS, 2015–present
- Advised 2 undergraduates through NTU’s CN Yang Scholars Undergraduate Research Experience program, 2016–present
- Advised 3 undergraduates through NTU’s Undergraduate Research Experience on Campus (URECA) program, 2012–2015
- Advised 7 undergraduates through Caltech’s Summer Undergraduate Research Fellowships (SURF) program, 2013–2014
- Co-teach *ES1003: Solid Earth* at NTU

SCIENTIFIC COMMUNITY SERVICE:

- Refereed 42 manuscripts or manuscript revisions for publication, 2003–present
- Reviewed 2 proposals for the U.S. National Science Foundation (NSF), 2011–present
- Reviewed 2 proposals for the French National Research Agency (ANR), 2018–present
- 2018 Asia Oceania Geosciences Society 15th Annual Meeting convener for the special session, “Bridging Observations from Geology and Geodesy to Understand Tectonic Deformation over Multiple Timescales”
- 2018 Asia Oceania Geosciences Society 15th Annual Meeting co-convener for the special session, “Where History and Geology Intercept: Multidisciplinary Approaches to Extending our Chronology of Catastrophic Geologic Events”
- 2014 American Geophysical Union Fall Meeting co-convener for the special session, “Science and Societal Lessons from a Decade of Giant Megathrust Earthquakes”
- External examiner for the PhD defense of Jennifer Weil Accardo, IPGP, France, June 2014
- Participant, GeoPRISMS Subduction Cycles & Deformation (SCD) Implementation Workshop, Austin, TX, January 2011
- 2010 American Geophysical Union Fall Meeting co-convener for the special session, “Subduction-Zone Segmentation over Multiple Earthquake Cycles”
- 2009 Geological Society of America Annual Meeting co-convener for the special session, “Paleogeodesy at Subduction Zones”
- 2006 Seismological Society of America Annual Meeting co-convener for the special session, “The Giant Sumatran Earthquakes of 2004 and 2005”

OUTREACH ACTIVITIES:

- Organized a geological field trip for CN Yang Scholars at NTU to eastern California, July 2016
- Public lectures given to various polytechnic and high schools in Singapore
- Lecture given to foreign government officials as part of the Ministry of Foreign Affairs (MFA) Singapore course entitled “Natural Disaster Risk Reduction and Management,” August 2011
- Contributed to an exhibition at the Science Centre Singapore, “Earth: Our Untamed Planet”
- Development of a website, educational exercises (undergraduate level), and a trail guide for the lay public for the offset of Wallace Creek along the San Andreas fault in the Carrizo Plain. The website URL is <http://www.scec.org/wallacecreek/> and the brochure and class exercises are available in PDF format from the website.

PUBLISHED PAPERS:

Note: Student first-authors I have co-advised are underlined.

- Rockwell, T.K., **A.J. Meltner**, and E.C. Haaker (2018). Dates of the two most recent surface ruptures on the southernmost San Andreas fault recalculated by precise dating of Lake Cahuilla dry periods, *Bulletin of the Seismological Society of America*, doi:10.1785/0120170392.
- Majewski, J.M., A.D. Switzer, **A.J. Meltner**, P.R. Parham, B.P. Horton, S.L. Bradley, J. Pile, H.-W. Chiang, X. Wang, C.T. Ng, J. Tanzil, M. Müller, and A. Mujahid (2018). Holocene relative sea-level records from coral microatolls in Western Borneo, South China Sea, *The Holocene*, doi:10.1177/0959683618777061.
- Morgan, P.M., L. Feng, **A.J. Meltner**, E.O. Lindsey, L.L.H. Tsang, and E.M. Hill (2017). Sibling earthquakes generated within a persistent rupture barrier on the Sunda megathrust under Simeulue Island, *Geophysical Research Letters* 44, 2159-2166, doi:10.1002/2016GL071901.
- Meltner, A.J.**, A.D. Switzer, B.P. Horton, E. Ashe, Q. Qiu, D.F. Hill, S.L. Bradley, R.E. Kopp, E.M. Hill, J.M. Majewski, D.H. Natawidjaja, and B.W. Suwargadi (2017). Half-metre sea-level fluctuations on centennial timescales from mid-Holocene corals of Southeast Asia, *Nature Communications* 8, 14387, doi:10.1038/ncomms14387.
- Tsang, L.L.H., **A.J. Meltner**, E.M. Hill, J.T. Freymueller, and K. Sieh (2015). A paleogeodetic record of variable interseismic rates and megathrust coupling at Simeulue Island, Sumatra, *Geophysical Research Letters* 42, 10585-10594, doi:10.1002/2015GL066366.
- Tsang, L.L.H., **A.J. Meltner**, B. Philibosian, E.M. Hill, J.T. Freymueller, and K. Sieh (2015). A 15 year slow-slip event on the Sunda megathrust offshore Sumatra, *Geophysical Research Letters* 42, 6630-6638, doi:10.1002/2015GL064928.
- Meltner, A.J.** (2015). Earthquakes: The rise and fall of an island (News & Views), *Nature Geoscience* 8, 501-502, doi:10.1038/ngeo2477.
- Meltner, A.J.**, K. Sieh, H.-W. Chiang, C.-C. Wu, L.L.H. Tsang, C.-C. Shen, E.M. Hill, B.W. Suwargadi, D.H. Natawidjaja, B. Philibosian, and R.W. Briggs (2015). Time-varying interseismic strain rates and similar seismic ruptures on the Nias–Simeulue patch of the Sunda megathrust, *Quaternary Science Reviews* 122, 258-281, doi:10.1016/j.quascirev.2015.06.003.
- Meltner, A.J.**, and C.D. Woodroffe (2015). Coral microatolls, in *Handbook of Sea-Level Research*, I. Shennan, A.J. Long, and B.P. Horton (Editors), John Wiley & Sons, Ltd., Chichester, UK, 125-145, doi:10.1002/9781118452547.ch8.
- Fujino, S., K. Sieh, **A.J. Meltner**, E. Yulianto, and H.-W. Chiang (2014). Ambiguous correlation of precisely dated coral detritus with the tsunamis of 1861 and 1907 at Simeulue Island, Aceh Province, Indonesia, *Marine Geology* 357, 384-391, doi:10.1016/j.margeo.2014.09.047.
- Lee, J.-M., E.A. Boyle, I.S. Nurhati, M. Pfeiffer, **A.J. Meltner**, and B. Suwargadi (2014). Coral-based history of lead and lead isotopes of the surface Indian Ocean since the mid-20th century, *Earth and Planetary Science Letters* 398, 37-47, doi:10.1016/j.epsl.2014.04.030.
- Bursik, M., K. Sieh, and **A. Meltner** (2014). Deposits of the most recent eruption in the southern Mono Craters, California: description, interpretation and implications for regional marker tephras, *Journal of Volcanology and Geothermal Research* 275, 114-131, doi:10.1016/j.jvolgeores.2014.02.015.
- Meltner, A.J.**, K. Sieh, H.-W. Chiang, C.-C. Shen, B.W. Suwargadi, D.H. Natawidjaja, B. Philibosian, and R.W. Briggs (2012). Persistent termini of 2004- and 2005-like ruptures of the Sunda megathrust, *Journal of Geophysical Research* 117, B04405, doi:10.1029/2011JB008888.
- Meltner, A.J.**, K. Sieh, H.-W. Chiang, C.-C. Shen, B.W. Suwargadi, D.H. Natawidjaja, B.E. Philibosian, R.W. Briggs, and J. Galetzka (2010). Coral evidence for earthquake recurrence and an A.D. 1390–1455 cluster at the south end of the 2004 Aceh–Andaman rupture, *Journal of Geophysical Research* 115, B10402, doi:10.1029/2010JB007499.

- Rockwell, T., D. Ragona, G. Seitz, R. Langridge, M.E. Aksoy, G. Ucar, M. Ferry, **A.J. Meltzner**, Y. Klinger, M. Meghraoui, D. Satir, A. Barka, and B. Akbalik (2009). Paleoseismology of the North Anatolian fault near the Marmara Sea: implications for fault segmentation and seismic hazard, in *Palaeoseismology: Historical and Prehistorical Records of Earthquake Ground Effects for Seismic Hazard Assessment*, K. Reicherter, A.M. Michetti, and P.G. Silva (Editors), The Geological Society, London, Special Publications 316, 31-54, doi:10.1144/SP316.3.
- Mériaux, A.-S., K. Sieh, R.C. Finkel, C.M. Rubin, M.H. Taylor, **A.J. Meltzner**, and F.J. Ryerson (2009). Kinematic behavior of southern Alaska constrained by westward decreasing postglacial slip rates on the Denali fault, Alaska, *Journal of Geophysical Research* 114, B03404, doi:10.1029/2007JB005053.
- Sieh, K., D.H. Natawidjaja, **A.J. Meltzner**, C.-C. Shen, H. Cheng, K.-S. Li, B.W. Suwargadi, J. Galetzka, B. Philibosian, and R.L. Edwards (2008). Earthquake supercycles inferred from sea-level changes recorded in the corals of West Sumatra, *Science* 322, 1674-1678, doi:10.1126/science.1163589.
- Konca, A.O., J.-P. Avouac, A. Sladen, **A.J. Meltzner**, K. Sieh, P. Fang, Z. Li, J. Galetzka, J. Genrich, M. Chlieh, D.H. Natawidjaja, Y. Bock, E.J. Fielding, C. Ji, and D.V. Helmberger (2008). Partial rupture of a locked patch of the Sumatra megathrust during the 2007 earthquake sequence, *Nature* 456, 631-635, doi:10.1038/nature07572.
- Shen, C.-C., K.-S. Li, K. Sieh, D. Natawidjaja, H. Cheng, X. Wang, R.L. Edwards, D.D. Lam, Y.-T. Hsieh, T.-Y. Fan, **A.J. Meltzner**, F.W. Taylor, T.M. Quinn, H.-W. Chiang, and K.H. Kilbourne (2008). Variation of initial $^{230}\text{Th}/^{232}\text{Th}$ and limits of high precision U–Th dating of shallow-water corals, *Geochimica et Cosmochimica Acta* 72, 4201-4223, doi:10.1016/j.gca.2008.06.011.
- Taylor, F.W., R.W. Briggs, C. Frohlich, A. Brown, M. Hornbach, A.K. Papabatu, **A.J. Meltzner**, and D. Billy (2008). Rupture across arc segment and plate boundaries in the 1 April 2007 Solomons earthquake, *Nature Geoscience* 1, 253-257, doi:10.1038/ngeo159.
- Konca, A.O., V. Hjorleifsdottir, T.-R. A. Song, J.-P. Avouac, D.V. Helmberger, C. Ji, K. Sieh, R. Briggs, and **A. Meltzner** (2007). Rupture kinematics of the 2005 M_w 8.6 Nias–Simeulue earthquake from the joint inversion of seismic and geodetic data, *Bulletin of the Seismological Society of America* 97, S307-S322, doi:10.1785/0120050632.
- Meltzner, A.J.**, T.K. Rockwell, and L.A. Owen (2006). Recent and long-term behavior of the Brawley fault zone, Imperial Valley, California: an escalation in slip rate?, *Bulletin of the Seismological Society of America* 96, 2304-2328, doi:10.1785/0120050233.
- Briggs, R.W., K. Sieh, **A.J. Meltzner**, D. Natawidjaja, J. Galetzka, B. Suwargadi, Y. Hsu, M. Simons, N. Hananto, I. Suprihanto, D. Prayudi, J.-P. Avouac, L. Prawirodirdjo, and Y. Bock (2006). Deformation and slip along the Sunda megathrust in the great 2005 Nias–Simeulue earthquake, *Science* 311, 1897-1901, doi:10.1126/science.1122602.
- Subarya, C., M. Chlieh, L. Prawirodirdjo, J.-P. Avouac, Y. Bock, K. Sieh, **A.J. Meltzner**, D.H. Natawidjaja, and R. McCaffrey (2006). Plate-boundary deformation associated with the great Sumatra–Andaman earthquake, *Nature* 440, 46-51, doi:10.1038/nature04522.
- Meltzner, A.J.**, K. Sieh, M. Abrams, D.C. Agnew, K.W. Hudnut, J.-P. Avouac, and D.H. Natawidjaja (2006). Uplift and subsidence associated with the great Aceh–Andaman earthquake of 2004, *Journal of Geophysical Research* 111, B02407, doi:10.1029/2005JB003891.
- Meltzner, A.J.**, and T.K. Rockwell (2004). The Tejon Pass earthquake of 22 October 1916: an M 5.6 event on the Lockwood Valley and San Andreas faults, southern California, *Bulletin of the Seismological Society of America* 94, 1293-1304, doi:10.1785/012003204.
- Klinger, Y., K. Sieh, E. Altunel, A. Akoglu, A. Barka, T. Dawson, T. Gonzalez, **A. Meltzner**, and T. Rockwell (2003). Paleoseismic evidence of characteristic slip on the western segment of the North Anatolian fault, Turkey, *Bulletin of the Seismological Society of America* 93, 2317-2332, doi:10.1785/0120010270.

Girty, G.H., J. Marsh, **A. Meltzner**, J.R. McConnell, D. Nygren, J. Nygren, G.M. Prince, K. Randall, D. Johnson, B. Heitman, and J. Nielsen (2003). Assessing changes in elemental mass as a result of chemical weathering of granodiorite in a Mediterranean (hot summer) climate, *Journal of Sedimentary Research* 73, 434-443, doi:10.1306/091802730434.

Meltzner, A.J., and D.J. Wald (2003). Aftershocks and triggered events of the great 1906 California earthquake, *Bulletin of the Seismological Society of America* 93, 2160-2186, doi:10.1785/0120020033.

Meltzner, A.J., and D.J. Wald (2002). Felt reports and intensity assignments for aftershocks and triggered events of the great 1906 California earthquake, *U. S. Geological Survey Open-File Report 02-37*, 301 pp.

Scientists from USGS, SCEC, and CDMG (2000). Preliminary report on the 16 October 1999 *M* 7.1 Hector Mine, California, earthquake, *Seismological Research Letters* 71, 11-23.

Meltzner, A.J., and D.J. Wald (1999). Foreshocks and aftershocks of the great 1857 California earthquake, *Bulletin of the Seismological Society of America* 89, 1109-1120.

Meltzner, A.J., and D.J. Wald (1998). Foreshocks and aftershocks of the great 1857 California earthquake, *U. S. Geological Survey Open-File Report 98-465*, 115 pp.

MANUSCRIPTS IN PROGRESS:

Note: Student first-authors I have co-advised are underlined.

Pham, D.T., A.D. Switzer, E.M. Hill, **A.J. Meltzner**, and H.X. Nguyen (2018). A new perspective on interannual sea-level variability around the South China Sea based on historical tide-gauge data, *Global and Planetary Change*, manuscript in review.

Meltzner, A.J., T.K. Rockwell, R.Y. Tsang, and P.M. Figueiredo (2018). Slip variability and temporal clustering along the Imperial fault at Mesquite Basin, Imperial Valley, California, and possible through-going rupture to the San Andreas fault, manuscript in preparation.

Meltzner, A.J., B. Philibosian, and K. Sieh (2018). Temporal variability of interseismic strain accumulation along subduction megathrusts, on timescales of decades to centuries, manuscript in preparation.

Philibosian, B., **A.J. Meltzner**, and K. Sieh (2018). Seismic cycle variability in space and time: the Sumatran Sunda megathrust as a behavior catalog, manuscript in preparation.

Pham, D.T., A.D. Switzer, G. Huerta, **A.J. Meltzner**, H.M. Nguyen, and E.M. Hill (2018). Spatiotemporal variation of extreme sea level around the South China Sea using the Dynamic Linear Model for the Generalized Extreme Value distribution, manuscript in preparation.

Majewski, J.M., **A.J. Meltzner**, A.D. Switzer, B.P. Horton, D.H. Natawidjaja, and B.W. Suwargadi (2018). Uncertainties in coral microatoll relative sea level studies, manuscript in preparation.

Majewski, J.M., **A.J. Meltzner**, A.D. Switzer, B.P. Horton, C.-C. Wu, H.-W. Chiang, C.-C. Shen, D.H. Natawidjaja, and B.W. Suwargadi (2018). Sea level index sequences from coral microatolls reveal details of higher-than-present relative sea level by 7.2 ka in the Riau Islands, Indonesia, manuscript in preparation.

Wan, X.W.J., **A.J. Meltzner**, A.D. Switzer, B.P. Horton, K. Lin, X. Wang, S. Bradley, D.H. Natawidjaja, and B.W. Suwargadi (2018). Relative sea-level stability at Natuna Island, Indonesia, since 6400 yr BP, manuscript in preparation.

SELECTED ABSTRACTS:

Meltzer, A.J., B. Philibosian, and K. Sieh (2017). Temporal variability of interseismic strain accumulation along subduction megathrusts, on timescales of decades to centuries, *Seismol. Res. Lett.* 87, 557.

Philibosian, B., **A.J. Meltzer**, and K. Sieh (2017). Segmentation and supercycles: earthquake cycle complexities and the Sumatran Sunda megathrust as a behavior catalog, *Seismol. Res. Lett.* 87, 679.

Meltzer, A.J., T.K. Rockwell, R.Y. Tsang, and P.M. Figueiredo (2016). Slip variability and temporal clustering along the Imperial fault at Mesquite Basin, Imperial Valley, California, and possible through-going rupture to the San Andreas fault, Abstract presented at the 2016 Annual Meeting, Southern California Earthquake Center, Palm Springs, California, 11–14 September.

THESES:

Meltzer, A.J. (2010). Earthquake recurrence, clustering, and persistent segmentation near the southern end of the 2004 Sunda megathrust rupture, Ph.D. Dissertation, California Institute of Technology, 300 pp. and online supplement. <http://resolver.caltech.edu/CaltechTHESIS:06012010-082222484>

Meltzer, A.J. (2006). Characterization of the long-term behavior of the Imperial and Brawley faults, Imperial Valley, California, Master's Thesis, San Diego State University, 149 pp. and 4 plates.

Meltzer, A.J. (2000). Aftershocks of the great 1906 San Francisco earthquake, based on intensity observations, Undergraduate Thesis, California Institute of Technology, 66 pp.

H-INDEX AND CITATIONS:

ResearcherID: h-index: 16 1405 citations

Scopus: h-index: 18 1632 citations

Google Scholar: h-index: 19 2219 citations

PROFESSIONAL SOCIETIES:

- American Geophysical Union; Geological Society of America; Seismological Society of America; Asia Oceania Geosciences Society; Sigma Xi, The Scientific Research Society