MALCOLM C. A. WHITE

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EDUCATION

2021	**PhD**, Geological Sciences University of Southern California, Department of Earth Sciences
2013	**BSc** Computational Geophysics Carleton University, Department of Earth Sciences

PROFESSIONAL APPOINTMENTS

2021 - present	**Postdoctoral Associate** Massachusetts Institute of Technology Department of Earth, Atmospheric and Planetary Sciences

PUBLICATIONS

Manuscripts Under Review

1. **White, M. C. A.**, Sharma, K., Li, A., Kumar, T. K. S., & Nakata, N. FastMapSVM: Classifying complex objects using the FastMap algorithm and Support-Vector Machines. *Communications Engineering*
2. **White, M. C. A.**, Zhang Z., Bai T., Qiu H., Chang H. & Nakata N. HDF5eis: A Solution for Storage and Access to Big, Multidimensional Data from Environmental Sensors. *GEOPHYSICS*
3. Zhang, Z., **White, M. C. A.**, Bai, T., Qiu, H., & Nakata, N. Characterizing Microseisms Induced by Hydraulic Fracturing with Hybrid Borehole DAS and Three-Component Geophone Data. *GEOPHYSICS*

Refereed Journal Articles

1. Nakata N., Nakata R., Kato A., Xue Z., & **White, M. C. A.** (In Press). Enigmatic doubly scattered tube waves at a crosswell seismic survey. *Geophysical Journal International*

2. Fang, H., **White, M. C. A**., Lu, Y., & Ben-Zion, Y. (2022). Seismic traveltime tomography of Southern California using Poisson-Voronoi cells and 20 years of data. *Journal of Geophysical Research: Solid Earth*. doi: 10.1029/2021JB023307

3. Jiang, C., Zhang, P., **White, M. C. A.**, Pickle, R., & Miller, M. S. (2022). A Detailed Earthquake Catalog for Banda Arc–Australian Plate Collision Zone Using Machine-Learning Phase Picker and an Automated Workflow. *The Seismic Record, 2*(1), 1–10. doi: 10.1785/0320210041

4. **White, M. C. A.**, Fang, H., Catchings, R. D., Goldman, M. R., Steidl, J. H., & Ben-Zion, Y. (2021). Detailed traveltime tomography and seismic catalogue around the 2019 M w7.1 Ridgecrest, California, earthquake using dense rapid-response seismic data. *Geophysical Journal International, 227*(1), 204–227. doi: 10.1093/gji/ggab224

5. **White, M. C. A.**, Fang, H., Nakata, N., & Ben-Zion, Y. (2020). PyKonal: A Python package for solving the Eikonal equation in spherical and Cartesian coordinates using the Fast Marching Method. *Seismological Research Letters, 91*(4), 2378-2389. doi: 10.1785/0220190318

6. **White, M. C. A.**, Ben-Zion, Y., & Vernon, F. L. (2019). A Detailed Earthquake Catalog for the San Jacinto Fault-Zone Region in Southern California. *Journal of Geophysical Research: Solid Earth, 124*, 6908–6930. doi: 10.1029/2019JB017641

7. Burdick, S., Vernon, F. L., Martynov, V., Eakins, J., Cox, T., Tytell, J., ... van der Hilst, R. D. (2017). Model Update May 2016: Upper-Mantle Heterogeneity beneath North America from Travel-Time Tomography with Global and USArray Data. *Seismological Research Letters, 88*(2A), 319–325. doi: 10.1785/0220160186

8. Ross, Z. E., Ben-Zion, Y., **White, M. C.**, & Vernon, F. L. (2016). Analysis of earthquake body wave spectra for potency and magnitude values: implications for magnitude scaling relations. *Geophysical Journal International, 207*(2), 1158–1164. doi: 10.1093/gji/ggw327

9. Ross, Z. E., **White, M. C.**, Vernon, F. L., & Ben-Zion, Y. (2016). An Improved Algorithm for Real-Time S -Wave Picking with Application to the (Augmented) ANZA Network in Southern California. *Bulletin of the Seismological Society of America, 106*(5), 2013–2022. doi: 10.1785/0120150230

10. Ben-Zion, Y., Vernon, F. L., Ozakin, Y., Zigone, D., Ross, Z. E., Meng, H., ... Barklage, M. (2015). Basic data features and results from a spatially dense seismic array on the San Jacinto fault zone. *Geophysical Journal International, 202*(1), 370–380. doi: 10.1093/gji/ggv142

11. Astiz, L., Eakins, J. A., Martynov, V. G., Cox, T. A., Tytell, J., Reyes, J. C., ... Vernon, F. L. (2014). The Array Network Facility Seismic Bulletin: Products and an Unbiased View of United States Seismicity. *Seismological Research Letters, 85*(3), 576–593. doi: 10.1785/0220130141

Conference Proceedings

1. **White, M. C. A.**, Nakata, N., Rodríguez Tribaldos, V., Nayak, A., & Dobson, P. Seismotectonic Evolution and Geothermal Energy Production in the Salton Sea Geothermal Field (2023) 2023 Stanford Geothermal Workshop.
2. Bai T., Zhang Z., **White, M. C. A.**, Qiu H., Williamson P., & Nakata N. (2022) A "sliding box" automatic relocation method based on geometric-mean reverse-time migration, *SEG Technical Program Expanded Abstracts*: 1516-1520. doi: 10.1190/image2022-3747339.1

AWARDS AND HONORS

2022	SCEC Award #22145 ($32 363) Massachusetts Institute of Technology

INVITED TALKS

2020	Earthquake Science Center Seminar United States Geological Survey
2020	Community Velocity Model Workshop Southern California Earthquake Center
2019	Friday Informal Seminar Hour Massachusetts Institute of Technology Department of Earth, Atmospheric and Planteary Sciences
2018	Geophysics Seminar Brown University Department of Earth, Environmental & Planteary Sciences

CONFERENCE ACTIVITY

Papers Presented

1. Dobson P., Stringfellow W., Sonnenthal E., Spycher N., Stokes-Draut J., Millstein D., Busse M., Camarillo M. K., Nakata N., Nayak A., **White M. C. A.**, Rodríguez Tribaldos V., McKibben M., Brounce M., Humphreys J., Garg S., Kim K. & Araya N. (2023) Overview of Improved Quantification of Li Resources for Lithium Valley Project. Accepted for presentation at 2023 Society for Mining, Metallurgy & Exploration Annual Meeting.

2. **White, M. C. A.**, Sharma, K., Li, A., Kumar, T. K. S., & Nakata, N. (2022) FastMapSVM: Classifying seismograms using the FastMap algorithm and Support-Vector Machines *Seismological Research Letters, 93*(2B), p. 1302. doi: 10.1785/0220220087
3. **White, M. C. A.**, & Nakata, N. (2021). FastMapSVM: Classifying seismograms using FastMap and Support-Vector Machines. S31A-02 presented at 2021 Fall Meeting, AGU, New Orleans, LA, 13-17 December.
4. **White, M. C. A.**, Ben-Zion, Y., & Vernon, F. (2021). Catalog Update: A Detailed Earthquake Catalog for the San Jacinto Fault Zone Region in Southern California. *Seismological Research Letters, 92*(2B), p. 1430. doi: 10.1785/0220210025
5. **White, M. C. A.**, Fang, H., Catchings, R. D., Goldman, M. R., Steidl, J. H., & Ben-Zion, Y. (2020). Detailed traveltime tomography and seismicity around the 2019 M7.1 Ridgecrest, CA, earthquake using dense rapid-response seismic data. S070-08 presented at 2020 Fall Meeting, AGU, San Francisco, CA, 1-17 December.
6. Fang, H., **White, M. C. A.**, Lu, Y., van der Hilst, R. D., & Ben-Zion, Y. (2020). Regional seismic velocity models for Southern California based on travel time tomography with Poisson Voronoi cells parameterization. S070-04 presented at 2020 Fall Meeting, AGU, San Francisco, CA, 1-17 December.
7. Catchings, R. D., Goldman, M. R., **White, M. C. A.**, Qiu, H., & Ben-Zion, Y. (2020). Results from dense nodal-array recordings of the 2019 Ridgecrest Sequence aftershocks. Oral Presentation at 2020 SCEC Annual Meeting.
8. **White, M. C. A.**, Fang, H., van der Hilst, R. D., & Ben-Zion, Y. (2019). The distribution of microseismicity correlates closely with velocity structure in the San Jacinto fault-zone region of Southern California. S21C-07 presented at 2019 Fall Meeting, AGU, San Fransisco, CA, 9-13 December.
9. **White, M. C. A.**, Ben-Zion, Y., & Vernon, F. L. (2019). Focal Mechanisms of Microseismicity in the San Jacinto Fault Zone Region of Southern California. *Seismological Research Letters, 90*(2B), p. 1042. doi: 10.1785/0220190061
10. **White, M. C. A.**, Ross, Z. E., Vernon, F. L., & Ben-Zion, Y. (2017). A Detailed Automatic Seismicity Catalog (1998-2015) for the San Jacinto Fault Zone Region. *Seismological Research Letters, 88*(2B), p. 569. doi: 10.1785/0220170035
11. **White, M. C. A.**, Ross, Z. E., Reyes, J. C., Vernon, F. L., & Ben-Zion, Y. (2015). An Improved Algorithm for Automatic Picking of Seismic S-wave Arrivals in Continuous Data with Application to the San Jacinto Fault Zone. *Seismological Research Letters, 86*(2B), p. 731. doi: 10.1785/0220150017
12. Ben-Zion, Y., Vernon, F. L., Ozakin, Y., Zigone, D., Ross, Z., Meng, H., **White, M. C. A.**, Reyes, J. C., Hollis, D., & Barklage, M. (2015). Basic Wave Propagation Results from a Highly-Dense Seismic Array on the San Jacinto Fault Zone. *Seismological Research Letters, 86*(2B), p. 594. doi: 10.1785/0220150017

Posters Presented

1. **White, M. C. A.**, Nakata, N., Rodríguez Tribaldos, V., Nayak, A., & Dobson, P. (2022). Assessing the impact of geothermal energy production on seismicity in the Salton Sea Geothermal Field. Poster Presentation at 2022 SCEC Annual Meeting.
2. **White, M. C. A.**, Ben-Zion, Y., & Vernon, F. L. (2021). A Detailed Earthquake Catalog for the San Jacinto Fault-Zone Region in Southern California and the period 2008-2020. Poster Presentation at 2021 SCEC Annual Meeting.
3. Luckie, T., Gase, A., Jacobs, K., **White, M. C. A.**, Henrys, S. A., Okaya, D. A., Van Avendonk, H. J., Bangs, N. L., Barker, D. H. N., Bassett, D., Kodaira, S., Arai, R., Fujie, G., & Yamamoto, Y. (2020). P-wave velocity structure of the northern Hikurangi margin from travel time tomography. T017-0010 presented at 2020 Fall Meeting, AGU, San Francisco, CA, 1-17 December.
4. **White, M. C. A.**, Fang, H., Catchings, R. D., Goldman, M. R., Steidl, J. H., & Ben-Zion, Y. (2020). Detailed traveltime tomography and seismicity around the 2019 M7.1 Ridgecrest, CA, earthquake using dense rapid-response seismic data. Poster Presentation at 2020 SCEC Annual Meeting.
5. Nakata, N., Fang, H., **White, M. C. A.**, & Pitarka, A. (2019). Shallow crustal heterogeneity in Southern California estimated from earthquake coda waves. Poster Presentation at 2019 SCEC Annual Meeting.
6. **White, M. C. A.**, Ben-Zion, Y., & Vernon, F. L. (2018). Detailed seismic catalog for the San Jacinto fault zone region (2008-2016) from automated processing of raw waveform data. Poster Presentation at 2018 SCEC Annual Meeting.
7. **White, M. C. A.**, Ross, Z. E., Ben-Zion, Y., & Vernon, F. L. (2017). A detailed, automatically-derived, seismicity catalog for the San Jacinto fault zone (1998-2016). Poster Presentation at 2017 SCEC Annual Meeting.
8. **White, M. C. A.**, Ross, Z. E., Vernon, F. L., & Ben-Zion, Y. (2016). A detailed automatic 1998-2015 earthquake catalog of the San Jacinto fault zone region. Poster Presentation at 2016 SCEC Annual Meeting.
9. **White, M. C. A.**, Ross, Z. E., Vernon, F. L., & Ben-Zion, Y. (2015). A Large Scale Automatic Earthquake Location Catalog in the San Jacinto Fault Zone Area Using An Improved Shear-Wave Detection Algorithm. S11A-2775 presented at 2015 Fall Meeting, AGU, San Francisco, CA, 14-18 December.
10. Vernon, F. L., Reyes, J. C., **White, M. C. A.**, Davis, G. A., Meyer, J. C., Sahakian, V. J., Mancinelli, N. J., Ben-Zion, Y., Zigone, D., Harris, C. W., Liu, X., Qiu, H., Share., P.-E., Ozakin, Y., Hollis, D., & Barklage, M. (2014). Observations at a San Jacinto Fault Zone site (Sage Brush Flat) Using a Nodal Seismic High Frequency Array. T11F-08 presented at 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 December.
11. Tytell, J. E., Cox, T. A., **White, M. C. A.**, Martynov, V. G., Eakins, J., & Vernon, F. L. (2014). The ANF Catalog of Central United States Seismicity. S51A-4381 presented at 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 December.

12. Mulder, T., Brillon, C., Bentkowski, W., **White, M. C. A.**, Rosenberger, A., Rogers, G. C., Vernon, F. L., & Kao, H. (2013). Analysis of the 2012 Oct 27 Haida Gwaii Aftershock Sequence. S32A-08 presented at 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 December.
13. Mulder, T., Brillon, C., Bentkowski, W., **White, M. C. A.**, Rosenberger, A., Rogers, G. C., Vernon, F. L., & Kao, H. (2011). WaveHRL: a high resolution, modular seismic event system and its application to the L'Aquila 2009 earthquake sequence. S32A-08 presented at 2011 Fall Meeting, AGU, San Francisco, CA, 5-9 December.

DEPARTMENTAL TALKS

2020	Lithospheric Dynamics Seminar University of Southern California Department of Earth Sciences
2018	Lithospheric Dynamics Seminar University of Southern California Department of Earth Sciences

TEACHING EXPERIENCE

Sattler College

1. Statistics and Data Science (2021)

University of Southern California

1. The Nature of Scientific Inquiry (2018, 2017)
2. Earthquakes (2018)

RESEARCH EXPERIENCE

2016 - 2021	University of Southern California Graduate Research Assistant
2013 - 2016	Scripps Institution of Oceanography Seismic Analyst
2011 - 2013	Pacific Geoscience Center Undergraduate Research Assistant
2010 - 2011	Geological Survey of Canada Undergraduate Research Assistant

SERVICE TO PROFESSION

1. Referee, *Tectonics* (2021)
2. Referee, *Geophysical Journal International* (2021)
3. Referee, *Physics of the Earth and Planetary Interiors* (2021)
4. Referee, *Pure and Applied Geophysics* (2021)
5. Referee, *Seismological Research Letters* (2021)
6. Referee, *Geophysical Journal International* (2020)
7. Referee, *Public Library of Science* (2020)

SERVICE TO DEPARTMENT

1. Organizing Committee, MIT EAPS Department Lecture Series (2022)

MENTORSHIP

2022 - present	Ryan Zaff Undergraduate, Pennsylvania State University
2021 - present	Kevin Krahn Undergraduate, Sattler College

PROFESSIONAL SOCIETY MEMBERSHIPS

2015 - present	American Geophysical Union
2016 - present	Seismological Society of America