

MALCOLM C. A. WHITE

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<https://malcolmw.github.io>

EDUCATION

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

PROFESSIONAL APPOINTMENTS

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

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

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| 2022 | SCEC Award #22145 (\$32 363) Massachusetts Institute of Technology |
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INVITED TALKS

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| 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 Planetary Sciences |
| 2018 | Geophysics Seminar Brown University Department of Earth, Environmental & Planetary 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 traveltimes 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 Francisco, 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

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| 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

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

PROFESSIONAL SOCIETY MEMBERSHIPS

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