



CURRICULUM VITAE

Dr. Vvn Weian Chao

Assistant Professor

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Educational Background:

Degree	Field	Year	University
B.S.	Earth & Environment Sciences	2008	National Chung Cheng University
Ph.D.	Geosciences	2012	National Taiwan University

Relevant Employment History:

Water Diver, Underwater Operations Unit (U.O.U), Republic of China Navy	2013/01-2013/12
Postdoctoral Researcher, Department of Geosciences, National Taiwan University	2013/12-2015/07
Independent Postdoctoral Researcher, Department of Geosciences, NTU	2015/07-2017/01
Assistant Professor, Department of Civil Engineering, National Chiao Tung University	2017/02-present

Current Fields of Interest:

Research focuses primarily on the Environmental Seismology (**EnviroSeis**). EnviroSeis aims to use seismic techniques in studying the Earth's surface processes. These processes include mass movements such as landslides, debris flow and rock/snow avalanches; glacial phenomena such as icequakes, glacier collapse/melt; water dynamics phenomena such as water level changes, water flow turbulent and river sediment transport. Focus is broadly defined as source dynamics of **earthquake**, **landslide** and **icequake**, and monitoring of **river processes** (flow turbulent and bedload transport) and **ground water level** through predominantly seismic methods. Other research includes seismic ambient noise analysis, earthquake early warning (EEW), seismotectonic, and earthquake and landslide hazard mitigation. While my focus is on fundamental research, most of my projects have direct ties to geohazards monitoring. Main goal for my research is to provide relevant information on the dynamics of surface processes, and thus allow for rapid hazard assessment and timely warning. Recent projects/paperwork include:

Publications (*Corresponding author):

Journal Articles:

2010

1. **Chao, W. A.**, Y. M. Wu*, and L. Zhao (2010) An Automatic Scheme for Baseline Correction of Strong-Motion Records in Coseismic Deformation Determination, *J. Seismol.*, 14:495-504. DOI 10.1007/s10950-009-9178-7. (IF=1.386, cited: 33)

2011

2. Shieh, J. T., Y. M. Wu*, L. Zhao, **W. A. Chao** and C. F. Wu (2011) An Examination of τ -Pd Earthquake Early Warning Method Using a Strong-Motion Building Array, *Soil Dynamics and Earthquake Engineering*, 31, 240-246, DOI:10.1016/j.soildyn.2009.12.015. (IF: 1.302, cited: 15)
3. Wu, Y. M., T. L. Lin*, **W. A. Chao**, H. H. Huang, N. C. Hsiao and C. H. Chang. (2011) Faster Short-distance Earthquake Early Warning Using Continued Monitoring of Filtered Vertical Displacement — A Case Study for the 2010 JiaSian Earthquake, Taiwan. *Bull. Seismol. Soc. Am.* 2, 701-709, doi: 10.1785/0120100153. (IF: 2.322, cited: 22)
4. **Chao, W. A.**, L. Zhao* and Y. M. Wu (2011) Centroid Fault-plane Inversion in Three-dimensional Velocity Structure Using Strong-Motion Records. *Bull. Seismol. Soc. Am.* 3, 1330-1340, doi: 10.1785/0120100245. (IF: 2.322, cited: 10)
5. Huang, H. H., Y. M. Wu*, T. L. Lin, **W. A. Chao**, J. Bruce H. Shyu, C. H. Chan, and C. H. Chang (2011) The Preliminary Analysis of the 2010 M_w 6.3 Jiasian, Taiwan, Earthquake Sequence. *Terr. Atmos. Ocean. Sci.*, 22, 283-290, doi: 10.3319/TAO.2010.12.13.01. (IF: 1.061, cited: 42)

2013

6. **Chao, W. A.***, L. Zhao, Y. M. Wu and S. J. Lee (2013) Imaging Source Slip Distribution by the

- Back-projection of P-wave Amplitudes from Strong-motion Records: A Case Study for the 2010 Jiasian, Taiwan, Earthquake. *Geophys. J. Int.*, 193, 1713-1725, doi:10.1093/gji/ggt082. (IF: 2.724, cited: 3)
7. Chen, C. H., **W. A. Chao***, Y. M. Wu, L. Zhao, Y. G. Chen, W. Y. Ho, T. L. Lin, K. H. Kuo and R. M. Zhang (2013) A Seismological Study of Landquakes Using a Real-Time Broadband Seismic Network. *Geophys. J. Int.*, 194, 885-898, doi:10.1093/gji/ggt121. (IF: 2.724, cited: 17)
 8. Chen, C. H., H. H. Huang, **W. A. Chao**, Y. M. Wu*, and C. H. Chang (2013) Reexamining the source parameters of the 2012 Wutai, Taiwan, Earthquake using P-wave first-motion polarity. *Terr. Atmos. Ocean. Sci.*, 24, No. 5, 827-835, doi: 10.3319/TAO.2013.05.30.01. (IF: 1.061, cited: 6)
- 2015**
9. **Chao, W. A.***, Y. M. Wu, L. Zhao, V. C. Tsai and C. H. Chen (2015) Seismologically determined bedload flux during the typhoon season, *Sci. Rep.*, 5, 8261; doi: 10.1038/srep08261. (IF: 5.578, cited: 11)
 10. Brown, D.*, Y. M. Wu, K. F. Feng, **W. A. Chao** and H. H. Huang (2015) Imaging high-pressure rock exhumation, *Geology*, 43(7), 651-654, doi: 10.1130/G36810.1. (IF: 4.638, cited: 4)
 11. Hsieh, C. Y., **W. A. Chao*** and Y. M. Wu (2015) An examination of the threshold-based earthquake early warning approach using low cost seismic network, *Seismol. Res. Lett.*, 86(6), 1664-1667, doi: 10.1785/0220150073. (IF: 2.156, cited: 3)
- 2016**
12. **Chao, W. A.***, L. Zhao, S. C., Chen, Y. M. Wu, C. H. Chen and H. H. Huang (2016) Seismology-based early identification of dam-formation landquake events, *Sci. Rep.* 5, 19259, doi: 10.1038/srep19259. (IF: 5.578, cited: 3)
 13. Mittal, H*, Y. M. Wu, D. Y. Chen and **W. A. Chao** (2016) Stochastic Finite Modeling of Ground Motion for March 5 2012 Earthquake and Scenario Greater Magnitude Earthquake in the Proximity of Delhi, *Nat. Hazards*, doi: 10.1007/s11069-016-2236-x. (IF: 1.719, cited: 4)
 14. Lai, T. H., H. Mittal*, **W. A. Chao** and Y. M. Wu (2016) A study on Kappa value in Taiwan using borehole and surface seismic array, *Bull. Seismol. Soc. Am.*, 106(4), doi:10.1785/0120160004. (IF: 2.322, cited: 4)
 15. Wu, Y. M., W. T. Liang, H. Mittal, **W. A. Chao**, C. H. Lin, B. S. Huang and C. M. Lin (2016) Performance of a low-cost earthquake early warning system (P-alert) during 2016 M_L 6.4 Meinong (Taiwan) earthquake, *Seismol. Res. Lett.*, 87(5), doi: 10.1785/0220160058. (IF: 2.156, cited: 12)
- 2017**
16. **Chao, W. A.***, Y. M. Wu, L. Zhao, H. Chen, Y. G. Chen, J. M. Chang and C. M. Lin (2017) A first near real-time seismology-based landquake monitoring system, *Sci. Rep.* 7:43510; doi: 10.1038/srep43510. (IF: 5.578, cited: 2)
 17. Jan, J. C., **W. A. Chao***, Y. M. Wu, C. C. Chen and C. H. Lin (2017) How well can we extract the permanent displacement from low-cost MEMS accelerometers?, *Sensors*, 17, 2643, doi:10.3390/s17112643. (IF: 2.677, cited: 0)
- 2018**
18. Kääh, A., S. Leinss, A. Gilbert, Y. Bühler, S. Gascoin, S. G. Evans, P. Bartelt, E. Berthier, F. Brun, **W. A. Chao**, D. Farinotti, F. Gimbert, W. Guo, C. Huggel, J. S. Kargel, G. Leonard, L. Tian, D. Treichler and T. Yao (2018) Massive collapse of two glaciers in western Tibet in 2016 after surge-like instability, *Nature Geoscience*, doi:10.1038/s41561-017-0039-7. (IF: 13.941, cited: 1).
 19. Wu, Y. M.*, S. K. Chen, T. C. Huang, H. H. Huang, **W. A. Chao** and I. Koulakov (2018) Relationship between earthquake b-values and crustal stresses in a young orogenic belt, *Geophys. Res. Lett.*, 45, doi: 10.1002/2017GL076694 (IF: 4.235 , cited: 0)
 20. **Chao, W. A.***, T. R. Wu, K. F. Ma, Y. T. Kuo, Y. M. Wu, L. Zhao, M. J. Chung, H. Wu and Y. L. Tsai (2018) The large Greenland landslide of 2017: Was a tsunami warning possible?, *Seismol. Res. Lett.* (IF: 2.156, cited: 0).
 21. Schöpa, A., **W. A. Chao**, B. Lipovsky, N. Hovius, R. S. White, R. G. Green and J. M. Turowski (2018) Dynamics of the Askja Caldera July 2014 landslide from seismic signal analysis: precursor, motion and aftermath, *Earth Surf. Dyn.*, 6, 467-485, <https://doi.org/10.5194/esurf-6-467-2018> (IF: 2.649, cited: 0)
 22. Wang, K. S., **W. A. Chao**, Himanshu Mittal and Y. M. Wu (2018) Building effects on the P-Alert based real-time shaking map determination, *Seismol. Res. Lett.* (Accepted, August; IF: 2.156).
 23. Ku, C. S., Y. T. Kuo, **W. A. Chao**, S. H. You, B. S. Huang, Y. G. Chen, F. W. Taylor and Y. M. Wu (2018) A first layered crustal velocity model for the western Solomon Islands: Inversion of the measured group velocity of surface wave using ambient noise, *Seismol. Res. Lett.* (accepted, August; IF: 2.156).
 24. Kuo, H. L., G. W. Lin, C. W. Chen, H. Saito, C. W. Lin, H. Chen and **W. A. Chao** (2018) Evaluating critical rainfall conditions for large-scale landslides by detecting event times from seismic records, *Nat.*

Short Biography

10/29/2018

Hazards Earth Syst. Sci., <http://doi.org/10.5194/nhess-2018-126>. (accepted, October; IF: 2.281)

Thesis:

Chao, W. A.* (2012) A Seismological Study of Sources: Earthquakes and Landquakes. *Ph. D. Dissertation*, National Taiwan University. (Advisor: Prof. [Yih-Min Wu](#) & Co-advisor: Dr. [Li Zhao](#))

Awards/Honor:

Richard Wolters Prize Award, International Association for Engineering Geology and the Environment ([IMPORTANCE](#)), **2018**

Grant from the Ministry of Science and Technology (MOST) under the prestigious Einstein Program, **2018**

Innovation Award for Geophysics, 4th International Conference on Engineering Geophysics **2017**

Invited talk in American Geophysical Union (T021:
Natural laboratories of climate-erosion-tectonic interaction during mountain building) **2016**

Invited talk in Chinese Geoscience Union
(Session in Progress in studies of Geophysics and Regional Dynamics of Asia) **2016**

MOST Best Postdoctoral Paper Award **2016**

Honorable mention, American Geophysical Union Outstanding Student Presentation Award
Competition (Seismology Section, S43C-2254). **2011**

Manuscripts Reviewed:

Reviewed over 18 manuscripts for Terrestrial Atmospheric and Oceanic Sciences, Natural Hazards and Earth System Sciences, Geophysical Research Letters, Seismological Research Letters, Bulletin of the Seismological Society of America, Scientific Reports, Earth Surface Dynamics, Journal of Geophysical Research- Solid Earth, Earth Planets and Space, Natural Hazards.

Professional Societies & Activities:

International conference session chair, G07 Geohazards Monitoring, IAG (Geodesy), IUGG **2015**

International conference session Co-Convener, GM1.5 Environmental Seismology: Deciphering Earth's surface processes with seismic methods **2017**

International conference session Co-Convener, GM2.3 Environmental Seismology: Deciphering Earth's surface processes with seismic methods **2018**