Pengfei Wang

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Education

University of California, Los Angeles
Ph.D., Civil Engineering, 2016-2020.
M.S., Statistics, 2017-2020.
M.S., Civil Engineering, 2015-2016

Tongji University, Shanghai, China
B.E., Transportation Engineering, 2011-2015.

École polytechnique fédérale de Lausanne - EPFL, Switzerland
Undergrad exchange program, 2015.01-2015.06

Employment

Old Dominion University
Assistant Professor, 2022.07-Present.

University of California, Los Angeles
Postdoctoral research scholar, 2020.10-2022.07.

Research Interests

Geotechnical Engineering, Engineering Seismology, Applied Statistics and Machine Learning

Dissertations

Ph.D. in Civil Engineering
"Predictability and Repeatability of Non-Ergodic Site Response for Diverse Geological Conditions"

M.S. in Statistics
"Geo-spatial Learning and Modeling for Seismic Site Responses in Los Angeles County"

Publications

Journal Articles

9. Nweke, CC, JP Stewart, **P Wang**, SJ Brandenberg. Site response of sedimentary basins and other geomorphic provinces in Southern California. *Earthquake Spectra*. (Accept).
8. Yang, Y, **P Wang**, SJ Brandenberg. An algorithm for generating spatially correlated random fields using Cholesky decomposition and ordinary kriging. *Computers and Geotechnics*.
7. **Wang, P**, YT Tasi, JP Stewart, A Mikami, SJ Brandenberg. Region-specific linear site amplification model for peaty organic soil sites in Hokkaido, Japan. *Earthquake Spectra*.
6. Xie, J, X Li, Z Wen, L Jia, Z An, J Cui, G Lin, Q Zhang, P Jiang, Q Xie, **P Wang**, P Zimmaro, JP Stewart. Soil profile database and site classification for national strong motion stations in Western China. *Seismological Research Letters*. **93 (3)**: 1930–1942.

5. **Wang, P**, P Zimmaro, TE Buckreis, T Gospe, SJ Brandenberg, SK Ahdi, A Yong, JP Stewart (2022). Relational database for horizontal-to-vertical spectral ratios. *Seismological Research Letters*. **93 (2A)**: 1075–1088.
4. Goulet, CA, Y Wang, CC Nweke, B Tang, **P Wang**, K Hudson, SK Ahdi, X Meng, MB Hudson, A Donnellan, GA Lyzenga, SJ Brandenberg, JP Stewart, T Gallien, MA Winters (2021). Comparison of near-fault displacement interpretations from field and aerial data for the M 6.5 and 7.1 Ridgecrest Earthquake Sequence ruptures. *Bulletin of the Seismological Society of America*. **111 (5)**: 2317-2333.
3. Ahdi, SK, S Mazzoni, T Kishida, **P Wang**, CC Nweke, NM Kuehn, V Contreras, B Rowshandel, JP Stewart, Y Bozorgnia (2020). Engineering characteristics of ground motions recorded in the 2019 Ridgecrest Earthquake Sequence. *Bulletin of the Seismological Society of America*. **110 (4)**: 1474-1494.
2. Brandenberg, SJ, JP Stewart, **P Wang**, CC Nweke, K Hudson, CA Goulet, X Meng, CA Davis, SK Ahdi, MB Hudson, A Donnellan, G Lyzenga, M Pierce, J Wang, MA Winters, M-P Delisle, J Lucey, Y Kim, TW Gallien, A Lyda, JS Yeung, O Issa, T Buckreis, Z Yi (2019). Ground deformation data from GEER investigations of Ridgecrest Earthquake Sequence. *Seismological Research Letters*. **91 (4)**: 2024-2034.
1. Zheng, N, T Dantsuji, **P Wang**, N Geroliminis (2017). Macroscopic approach for optimizing road space allocation of bus lanes in multimodal urban networks through simulation analysis. *Journal of the Transportation Research Board*. **No. 2651**, DOI: 10.3141/2651-05.

Submitted and Prepared Articles

5. **Wang, P**, P Zimmaro, SK Ahdi, A Yong, JP Stewart. Measurement and identification protocols for horizontal-to-vertical spectral ratio peaks. *Bulletin of the Seismological Society of America*. (Under revision).
4. Bullock, Z, P Zimmaro, G Lavrentiadis, **P Wang**, O Ojomo, D Asimaki, EM Rathje, JP Stewart. A latent Gaussian process model for the spatial distribution of liquefaction manifestation. *Earthquake Spectra*. (Submitted).
3. Buckreis, TB, JP Stewart, SJ Brandenberg, **Wang, P**. Subregional anelastic attenuation model for California. *Bulletin of the Seismological Society of America*. (Submitted).
2. **Wang, P**, Z Liu, SJ Brandenberg, P Zimmaro, JP Stewart. Regression-based scenario selection method for regional hazard-consistent seismic risk assessment. *Earthquake Spectra*. (In preparation).
1. **Wang, P**, TE Buckreis, SJ Brandenberg, JP Stewart. Modified hyperbolic model for dynamic properties of peaty organic soils. *Journal of Geotechnical and Geoenvironmental Engineering*. (In preparation).

Conference Papers

6. **Wang, P**, Z Liu, SJ Brandenberg, P Zimmaro, JP Stewart. Regression-based event selection for hazard-consistent seismic risk assessment. *Proceedings of the 12th National Conference in Earthquake Engineering*. Earthquake Engineering Research Institute, Salt Lake City, UT, 2022.
5. **Wang, P**, TE Buckreis, SJ Brandenberg, JP Stewart (2022-23). Modified hyperbolic model for dynamic properties of peaty organic soils. *Proceeding of the Geo-Congress 2023 Conference, ASCE*. Los Angeles, CA, 2023. (Accepted).
4. Zimmaro, P, **P Wang**, D Asimaki, ZN Bullock, EM Rathje,O Ojomo, JL Donahue, Y Bozorgnia, A Mosleh, JP Stewart (2021). Regional-scale geohazards evaluation for risk assessment of natural gas storage and transmission infrastructure. *Proceeding of the Geo-Extreme 2021 Conference, ASCE*.
3. **Wang, P**, JP Stewart (2019). Data-derived site response and its predictability using ergodic and site-specific methods. *Proceeding of SMIP2019 Seminar on Utilization of Strong Motion Data*. California Strong Motion Instrumentation Program, UCLA, CA. October 18.

2. Stewart, JP, **P Wang**, DP Teague, A Vecchietti (2019). Applications of non-ergodic site response in ground motion modeling. *Proceeding of 7th International Conference on Earthquake Geotechnical Engineering* (Invited Keynote), Rome, Italy. June 17-20, P: 51-70.
1. Nweke, CC, **P Wang**, SJ Brandenberg, JP Stewart (2018). Reconsidering basin effects in ergodic site response models. *Proceeding of SMIP2018 Seminar on Utilization of Strong Motion Data*. California Strong Motion Instrumentation Program, Sacramento, CA. October 19.

Technical Reports

5. **Wang, P**, P Zimmaro, T Gospe, SK Ahdi, A Yong, JP Stewart (2021). Horizontal-to-vertical spectral ratios from California sites: Open-source database and data interpretation to establish site parameters. *Report GIRS-2021-06*. B. John Garrick Risk Institute, Natural Hazards Risk and Resiliency Research Center, UCLA.
4. Stewart, JP, SJ Brandenberg, **P Wang**, CC Nweke, K Hudson, S Mazzoni, Y Bozorgnia, CA Goulet, KW Hudnut, CA Davis, SK Adhi, F Zareian, J Fayaz, RD Koehler, C Chupik, I Pierce, A Williams, S Akciz, MB Hudson, T Kishida (2019). Preliminary report on engineering and geological effects of the July 2019 Ridgecrest Earthquake Sequence. *Report No. GEER-064*. DOI: 10.18118/G6H66K.
3. **Wang, P**, P Zimmaro, SK Ahdi, DY Kwak, JP Stewart (2019). Shear wave velocity database and its application for analysis of non-ergodic site amplification effects. *U.S. Geological Survey*, Report No. G17AP00018.
2. Kayen, R, B Wham, A Grant, M Atsushi, D Anderson, P Zimmaro, **P Wang**, YT Tsai, J Bachhuber, C Madugo, J Sun, C Hitchcock, M Motto (2019). Seismological, geological, and geotechnical engineering aspects of the 2018 Magnitude 6.6 Hokkaido Eastern Iburi Earthquake. *Report No. GEER-060*. DOI: 10.18118/G6CM1K.
1. **Wang, P**, JP Stewart, Y Bozorgina, DM Boore, T Kishida (2017). "R" package for computation of earthquake ground motion response spectra. *Report No. 2017/09*. PEER, UC Berkeley.

Presentations

Oral presentation

4. Oral presenter. 12th National Conference in Earthquake Engineering, Salt Lake City, UT. 06/27/2022-07/01/2022.
3. Oral presenter. Seismological Society of America Annual Meeting. 04/19/2021-04/23/2021.
2. Seminar presenter. Institute of Geophysics, China Earthquake Administration. 12/23/2019.
1. Seminar presenter. Institute of Geophysics, China Earthquake Administration. 12/17/2018.

Poster presentation

2. Poster presenter. Seismological Society of America Annual Meeting. 04/19/2021-04/23/2021.
1. Poster presenter. Earthquake Engineering Research Institute. 03/23/2021-03/25/2021.

Softwares

3. An R Package for Computation of Earthquake Ground Motion Response Spectra.
https://github.com/wltcwpf/RCTC

2. An R Package for Horizontal-to-Vertical Spectral Ratios processing. DOI: 10.5281/zenodo.4724141.
https://github.com/wltcwpf/hvsrProc

1. A Python Jupyter Notebook for HVSR Database Access and Analysis. DesignSafe-CI. PRJ-3085. DOI: 10.17603/ds2-nn2e-wm79.
https://doi.org/10.17603/ds2-nn2e-wm79

Professional Service

Journal reviewer, *Earthquake Spectra*
Journal reviewer, *Bulletin of the Seismological Society of America*
Journal reviewer, *Seismological Research Letters*
Reviewer, *2023 Geo-congress Conference*
Member, *Earthquake Engineering Research Institute*
Member, *Seismological Society of America*
Member, *Geotechnical Extreme Event Reconnaissance Association*
Member, *American Society of Civil Engineers*

Teaching

Old Dominion University
Instructor, Soil Mechanics, Fall 2022-23
Instructor, Soil Mechanics Laboratory, Fall 2022-23.

UCLA
TA, Design of Foundations and Earth Structures, Winter 2019-20
TA, Principles of Soil Mechanics, Fall 2016.
TA, Introduction to Monte Carlo Methods, Fall 2019.
Reader, Introduction to Statistics, Summer 2020

Languages and Skills

English (fluent), Chinese (native)
R, Python, Matlab, MySQL, LaTeX

Committee

Jonathan P. Stewart (Ph.D. advisor)
Civil and Environmental Engineering
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