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Geotechnical risk and reliability, spatial variability, probabilistic site characterization, probabilistic soil/rock properties

期刊論文 (Journal Papers)

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1. Ching, J.✉, Phoon, K.K., and Pan, Y.K. (2017). On characterizing spatially variable soil Young's modulus using spatial average, *Structural Safety*, 66, 106-117. (SCI) (MOST 105-2221-E-002-042-MY3)
2. Ching, J.✉, Lin, G.H., Chen, J.R., and Phoon, K.K. (2017). Transformation models for effective friction angle and relative density calibrated based on a multivariate database of coarse-grained soils, *Canadian Geotechnical Journal*, 54(4), 481-501. (SCI)
3. Ching, J.✉ and Phoon, K.K. (2017). Characterizing uncertain site-specific trend function by sparse Bayesian learning, *ASCE Journal of Engineering Mechanics*, 143(7), 04017028. (SCI)
4. Ching, J.✉, Phoon, K.K., and Sung, S.P. (2017). Worst case scale of fluctuation in basal heave analysis involving spatially variable clays, *Structural Safety*, 68, 28-42. (SCI)
5. Ching, J.✉ and Wang, J.S. (2017). Discussion: Transitional Markov Chain Monte Carlo: Observations and Improvements, *ASCE Journal of Engineering Mechanics*, 143(9), 07017001. (SCI)
6. Ching, J.✉, Phoon, K.K., Beck, J.L., and Huang, Y. (2017). Identifiability of geotechnical site-specific trend functions, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, 3(4), 04017021. (SCI)
7. Ching, J.✉ and Wu, T.J. (2017). Probabilistic transformation model for preconsolidation stress based on clay index properties, *Engineering Geology*, 226, 33-43. (SCI)
8. Ching, J.✉, Lin, G.H., Phoon, K.K., and Chen, J.R. (2017). Correlations among some parameters of coarse-grained soils – the multivariate probability distribution model, *Canadian Geotechnical Journal*, 54(9), 1203-1220. (SCI)
9. Ching, J.✉, Hu, Y.G, and Phoon, K.K. (2018). Effective Young's modulus of a spatially variable soil mass under a footing. *Structural Safety*, 73, 99-113. (SCI)
10. Ching, J.✉ (2018). What does the soil parameter estimated from a transformation model really mean? *Journal of GeoEngineering*, 13(3), 105-113. (EI)
11. Ching, J.✉, Wu, T.J., Stuedlein, A.W., and Bong, T. (2018). Estimating horizontal scale of fluctuation with limited CPT soundings. *Geoscience Frontiers*, 9, 1597-1608. (SCI)

12. [Ching, J.](#), Li, K.H., Phoon, K.K., and Weng, M.C. (2018). Generic transformation models for some intact rock properties. *Canadian Geotechnical Journal*, 55(12), 1702-1741. (SCI)
13. Tabarrokhi, M. and [Ching, J.](#) (2019). Discretization error in random finite element method for spatially variable undrained shear strength, *Computers and Geotechnics*, 105, 183-194. (SCI)
14. [Ching, J.](#) and Phoon, K.K. (2019). Impact of auto-correlation function model on the probability of failure. *ASCE Journal of Engineering Mechanics*, 145(1), 04018123. (SCI)
15. [Ching, J.](#) and Phoon, K.K. (2019). Constructing site-specific multivariate probability distribution model by Bayesian machine learning, *ASCE Journal of Engineering Mechanics*, 145(1), 04018126. (SCI)
16. Yang, Z.Y. and [Ching, J.](#) (2019). A novel simplified geotechnical reliability analysis method, *Applied Mathematical Modelling*, 74, 337-349. (SCI)
17. [Ching, J.](#), Phoon, K.K., Stuedlein, A.W., and Jaksa, M. (2019). Identification of sample path smoothness in soil spatial variability. *Structural Safety*, 81, 101870. (SCI)
18. [Ching, J.](#), Phoon, K.K., Li, K.H., and Weng, M.C. (2019). Multivariate probability distribution for some intact rock properties, *Canadian Geotechnical Journal*, 56(8), 1080-1097. (SCI)
19. Lee, S.W. and [Ching, J.](#) (2020). Simplified risk assessment for a spatially variable undrained long slope. *Computers and Geotechnics*, 117, 103228. (SCI)
20. [Ching, J.](#), Phoon, K.K., Chen, K.F., Orr, T.L.L., and Schneider, H.R. (2020). Statistical determination of multivariate characteristic values using quantile-value method. *Structural Safety*, 82, 101893. (SCI)
21. [Ching, J.](#) and Phoon, K.K. (2020). Measuring similarity between site-specific data and records from other sites. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, 6(2), 04020011. (SCI)
22. [Ching, J.](#) and Phoon, K.K. (2020). Constructing a site-specific multivariate probability distribution using sparse, incomplete, and spatially variable (MUSIC-X) data. *ASCE Journal of Engineering Mechanics*, 146(7), 04020061. (SCI)
23. [Ching, J.](#), Phoon, K.K., Khan, Z., Zhang, D.M., and Huang, H.W. (2020). Role of municipal database in constructing site-specific multivariate probability distribution. *Computers and Geotechnics*, 124, 103623. (SCI)
24. Ignatius, T., Ou, C.Y., and [Ching, J.](#) (2020). Calibration of reliability-based safety factors for sand boiling in excavations, *Canadian Geotechnical Journal*, 57(5), 742-753. (SCI)
25. Yang, Z.Y. and [Ching, J.](#) (2020). Reliability-based design method based on quantile-based first-order second-moment. *Applied Mathematical Modeling*, 88, 461-473. (SCI)
26. Cami, B., Javankhoshdel, S., Phoon, K.K., and [Ching, J.](#) (2020). Scale of fluctuation for spatially varying soils: estimation methods and values. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, 6(4), 03120002. (SCI)
27. [Ching, J.](#), Huang, W.H., and Phoon, K.K. (2020). 3D probabilistic site characterization by sparse Bayesian learning. *ASCE Journal of Engineering Mechanics*, 146(12), 04020134. (SCI)
28. [Ching, J.](#) (2020). Value of geotechnical BIG DATA and its application in site-specific soil property estimation. *Journal of GeoEngineering*, 15(4), 173-182. (EI)
29. Yang, Z.Y. and [Ching, J.](#) (2021). Simulation of three-dimensional random field conditioning on incomplete site data. *Engineering Geology*, 281, 105987. (SCI)

30. Ching, J., Yang, Z.Y., and Phoon, K.K. (2021). Dealing with non-lattice data in three-dimensional probabilistic site characterization. *ASCE Journal of Engineering Mechanics*, 147(5), 06021003. (SCI)
31. Chang, Y.C., Ching, J., Phoon, K.K., and Yue, Q.X. (2021). On the hole effect in soil spatial variability. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, 7(4), 04021039. (SCI)
32. Ching, J., Wu, S., and Phoon, K.K. (2021). Constructing quasi-site-specific multivariate probability distribution using hierarchical Bayesian model, *ASCE Journal of Engineering Mechanics*, 147(10), 04021069. (SCI)
33. Shuku, T. and Ching, J. (2021). Case histories on 2D/3D underground stratification using sparse machine learning. *ISSMGE International Journal of Geoengineering Case Histories*, 6(4), 35-47.
34. Stuedlein, A.W., Bong, T., Montgomery, J., Ching, J., and Phoon, K.K. (2021). Effect of densification on the random field model parameters of liquefiable soil and their use in estimating spatially-distributed liquefaction-induced settlement. *ISSMGE International Journal of Geoengineering Case Histories*, 6(4), 1-16.
35. Ching, J., Phoon, K.K., Ho, Y.H., and Weng, M.C. (2021). Quasi-site-specific prediction for deformation modulus of rock mass. *Canadian Geotechnical Journal*, 58, 936-951. (SCI)

研討會論文 (Conference Papers)

1. Ching, J. and Hu, Y.G. (2017). Effective Young's modulus for a footing on a spatially variable soil mass. *Geo-Risk 2017/6th ISGSR*.
2. Ching, J. and Phoon, K.K. (2017). Characterizing unknown trend using sparse Bayesian learning. *Geo-Risk 2017/6th ISGSR*.
3. Ching, J., Hu, Y.G., and Tabarrok, M. (2017). Mobilization of spatially variable shear strength. *ICOSSAR 2017*.
4. Ching, J. (2017). Construction of site-specific probabilistic transformation model for geotechnical design. *Int. Symp. on Life-cycle Engineering and Sustainability Infrastructure. (keynote lecture)*
5. Phoon, K.K. and Ching, J. (2017). Homogenization of shear strength and modulus in spatially variable soils. *IACMAG 2017. (invited lecture)*
6. Phoon, K.K. and Ching, J. (2017). Better correlations for geotechnical design. *GeoSS 10th Anniversary Conference. (State-of-the-Practice Lecture)*
7. Ching, J. and Phoon, K.K. (2018). Bayesian data mining for a generic geotechnical database. *6 ISRERM. (keynote lecture)*
8. Ching, J. and Phoon, K.K. (2018). Constructing multivariate probability distribution for soil properties based on site-specific data. *6 ISRERM*.
9. Ching, J. and Phoon, K.K. (2018). Mobilized Young's modulus of a footing. *6 ISRERM*.
10. Ching, J. and Phoon, K.K. (2018). Impact of sample path smoothness of random field on geotechnical reliability. *5th National Symposium on Engineering Risk & Insurance Research. (keynote lecture)*
11. Ching, J. and Phoon, K.K. (2019). Making use of a generic geotechnical database for site-specific purposes. *13th Chinese National Conference on Soil Mechanics and Geotechnical Engineering. (invited lecture)*

12. Ching, J. and Phoon, K.K. (2019). Role of generic soil database in site-specific soil property estimation. 16th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering. **(keynote lecture)**
13. Phoon, K.K. and Ching, J. (2019). Managing uncertain ground truth using Bayesian machine learning. 29th European Safety and Reliability Conference. **(keynote lecture)**
14. Phoon, K.K. and Ching, J. (2019). The “site challenge” in geotechnical engineering. 13th International Conference on Applications of Statistics and Probability in Civil Engineering. **(keynote lecture)**
15. Phoon, K.K., Ching, J., and Wang, Y. (2019). Managing risk in geotechnical engineering – from data to digitalization. 7th International Symposium on Geotechnical Safety and Risk. **(Suzanne Lacasse lecture)**
16. Ching, J. (2019). Constructing site-specific multivariate probability distribution model: Hybridization versus hierarchical Bayesian analysis. International Symposium on Reliability of Multi-disciplinary Engineering Systems under Uncertainty. **(keynote lecture)**
17. Ching, J. and Phoon, K.K. (2020). Learning about a site using sparse site-specific data - recent advancements. 7th Asian-Pacific Symposium on Structural Reliability and Its Applications. **(keynote lecture)**
18. Ching, J. (2020). Value of geotechnical BIG DATA – Soil/rock property estimation & geotechnical structure performance prediction. (大地工程講座, Taiwan Geotechnical Society)
19. Ching, J. (2021). Recent developments on data-driven geotechnics. 6th National Symposium on Engineering Risk & Insurance Research (6th NSERIR 2021). (keynote lecture)
20. Ching, J. (2021). MUSIC-3X: A case history. Machine Learning & Risk Assessment in Geoengineering (MLRA 2021). (keynote lecture)
21. Ching, J. (2021). MUSIC-3X: A case history. TVSeminars.com. (keynote lecture)

專書及專書論文(Monographs and Monograph Papers)

1. Ching, J., Li, D. Q. & Zhang, J. (Eds) (2019). Proceedings, 7th International Symposium on Geotechnical Safety and Risk, Research Publishing, 11-13 December 2019, Taipei, Taiwan, 899pp.