

## Academic & Research Publications

### Journals

1. Wu, B., Liu, W., Chian, S.C. & Yan, J. (2024), "Analysis of Working Face Stability of Longitudinally Inclined Shield Driven Tunnels in Frictional Soils", *Tunnelling and Underground Space Technology incorporating Trenchless Technology Research*, 144, 105579.
2. Li, Y.E., Chian, S.C., Nilot, E.A. & Fang, G. (2024), "Multi-Mode Rayleigh Wave Dispersion Spectrum Inversion Using Wasserstein Distance Coupled with Bayesian Optimization", *Geophysics*, 89(3), 1-64.
3. Zhang, Z. & Chian, S.C. (2024), "Robustness of Remediation Measures Against Liquefaction Induced Manhole Uplift under Mainshock-aftershock Sequence", *Soils and Foundations*.
4. Niu, Y., Chian, S.C. & Li, Y.E. (2024), "Assessing the Strength Evolution of Cement-Stabilized Clay using Small-Strain Shear Modulus: A Modified Gompertz Model Conversion Approach", *Acta Geotechnica*.
5. Wang, H., Huang, M., Liu, Y. & Chian, S.C. (2024), "Discretization-Based Kinematic Approach for Three-Dimensional Stability Analysis of Slurry Trenches in Cohesive-Frictional Soils", *International Journal of Geomechanics*, 24(1), 0402353.
6. Shen, Z., Chian, S.C., Tan, S.A. & Leung, C.F. (2024), "Modelling of Smear Effect of Vertical Drains Using a Diameter Reduction Method", *Journal of Rock Mechanics and Geotechnical Engineering*, 16, 279-290. DOI: 10.1016/J.JRMGE.2023.06.021.
7. Wang, H., Huang, M., Liu, Y. & Chian, S.C. (2023), "Discretization-Based Kinematic Approach for Three-Dimensional Trench Stability under Slurry Support in Multilayered Ground", *Acta Geotechnica*, 18, 6395-6412. DOI: 10.1007/s11440-023-02099-6.
8. Cao, G., Chian, S.C., Ding, X., Luan, L., Zheng, C. & Zhou, P. (2023), "Horizontal Static Impedances for OWT Monopiles Based on Timoshenko Beam Theory", *International Journal of Geomechanics*, 23(11), 04023202.
9. Wang, J., Chian, S.C., Ma, T. & Ding, J. (2023), "Stabilization of Dredged Clays with Ternary Alkali-Activated Materials: Towards Sustainable Solid Wastes Recycling", *Journal of Cleaner Production*, 426, 139086. DOI: 10.1016/J.JCLEPRO.2023.139086.
10. Niu, Y., Chian, S.C., Li, Y.E. & Fang, G. (2023), "Laboratory Small-Strain Stiffness Measurement Using Distributed Acoustic Sensing", *ASTM Geotechnical Testing Journal*, 46(5). DOI: 10.1520/GTJ20220204.
11. Cao, G., Chian, S.C., Ding, X., Zheng, C., Luan, L. & Zhou, Q. (2023), "Dynamic Response of OWTs under Wind-Wave Loads Considering 3D Water-Pile-Soil Interactions", *Ocean Engineering*, 283, 115057.
12. Shen, Z., Tian, Y., Chian, S.C. & Yan, Z. (2023), "Improving the Estimation of Soil Spatial Variability by Considering Transformation Uncertainty based on LDRFE Analysis", *Computers and Geotechnics*, 156, 105299.
13. Ding, X., Chian, S.C., Lian, J., Cao, G., Shen, J. & Luan, L. (2023), "Wind-Wave Combined Effect on Dynamic Response of Soil-Monopile-OWT System Considering Cyclic Hydro-Mechanical Clay Behavior", *Computers and Geotechnics*, 154(3), 105124.
14. Lo, M.K., Loh, D.R.D., Chian, S.C. & Ku, T. (2023), "Probabilistic Prediction of Consolidation Settlement and Pore Water Pressure Using Variational Autoencoder Neural Network", *Journal of Geotechnical and Geoenvironmental Engineering*, 149(1), 04022119.

15. Li, S., Qin, C., Chian, S.C. & Zhang, W. (2022), "Another Look at the Stability of Unsaturated Soil Slopes Considering Nonuniformity and Nonlinearity", *Computers and Geotechnics*, 148, 104743.
16. Qin, C., Li, Y., Yu, J., Chian, S.C. & Liu, H. (2022), "Closed-form Solutions for Collapse Mechanisms of Tunnel Crown in Saturated Non-uniform Rock Surrounds", *Tunnelling and Underground Space Technology*, 126, 104529.
17. Vergote, T.A., Leung, C.F. & Chian, S.C. (2022), "Modelling Creep and Swelling after Unloading under Constant Load and Relaxation with Bayesian Updating", *Geotechnique*, 72(6), 496-509. DOI: 10.1680/jgeot.20.P.106.
18. Niu, Y., Li, Y.E., Chian, S.C., Nilot, E. & Gang, F. (2022), "In-situ Physical Properties of Reclaimed Lands in Singapore", *The Leading Edge*, 41(5), 296-303.
19. Shen, Z., Jin, D., Pan, Q., Yang, H. & Chian, S.C. (2022), "Discussion to Effect of Soil Spatial Variability on Failure Mechanisms and Undrained Capacities of Strip Foundations under Uniaxial Loading", *Computers and Geotechnics*, 142, 104539.
20. Zhang, Z. & Chian, S.C. (2022), "Revisiting Factor of Safety Used for Manhole Uplift Induced by Soil Liquefaction", *Acta Geotechnica*, 17(2), 441-452.
21. Shen, Z., Pan, Q., Chian, S.C., Gourvenec, S. & Tian, Y. (2022), "Probabilistic Failure Envelopes of Strip Foundations on Soils with Non-stationary Characteristics of Undrained Shear Strength", *Geotechnique* (available ahead of print).
22. Zhang, Z. & Chian, S.C. (2021). "Layering Effects of Sand Samples Prepared by Traveling Pluviators", *International Journal of Physical Modelling in Geotechnics*, 22(2), 88-98. DOI: 10.1680/jphmg.20.00061.
23. Chian, S.C. (2022), "Post-earthquake Reconnaissance: Theories versus Observations", In *Civil Engineering for Disaster Risk Reduction*, Springer, 191-207.
24. Shen, Z., Jin, D., Pan, Q., Yang, H. & Chian, S.C. (2021), "Effect of Soil Spatial Variability on Failure Mechanisms and Undrained Capacities of Strip Foundations under Uniaxial Loading", *Computers and Geotechnics*, 139, 104387.
25. Pal, I., Doydee, P., Utarasakul, T., Jaikaew, P., Razak, K.A.B., Fernandez, G. & Chian, S.C. (2021), "System Approach for Flood Vulnerability and Community Resilience Assessment at the Local Level – A Case Study of Sakon Nakhon Province, Thailand", *Kasetsart Journal of Social Sciences*, 42, 67-76.
26. Vergote, T.A., Leung, C.F. & Chian, S.C. (2021), "Elastoviscoplastic Modelling with Distorted Isotaches and Swelling for Constant Strain Rate and Incremental Loading", *International Journal for Numerical and Analytical Methods in Geomechanics*, 45(13), 1920-1933. DOI: 10.1002/nag.3248.
27. Bi, J. & Chian, S.C. (2021), "Estimation of Strength Development of Cement Stabilised Clayey Soils with Activity Number, Liquid Limit and Apparent Void Ratio", *International Journal of Geomechanics*, 21(8), 04021147. DOI:10.1061/(ASCE)GM.1943-5622.0002080.
28. Bi, J. & Chian, S.C. (2021), "Modelling Strength Development of Cement Stabilised Clay and Clay with Sand Impurities under Varying Temperatures", *Bulletin of Engineering Geology and the Environment*, 80, 6275-6302. DOI: 10.1007/s10064-021-02281-8.
29. Wang, H., Huang, M. & Chian, S.C. (2021). "Three-dimensional Trench Stability in Non-uniform Undrained Clay with Discretization-based Kinematic Analysis", *Computers and Geotechnics*, 135, 104166. DOI: 10.1016/j.compgeo.2021.104166.
30. Zhang, Z. & Chian, S.C. (2021), "Novel Mitigation Techniques using Base Opening and Permeable Piles against Sand Liquefaction Induced Uplift for Existing Manholes", *Acta Geotechnica*, 16, 2241-2250. DOI: 10.1007/s11440-021-01166-0.

31. Lo, M.K., Wei, X., Chian, S.C. & Ku, T. (2021), "Bayesian Network Prediction of Stiffness and Shear Strength of Sand", *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE. DOI: 10.1061/(ASCE)GT.1943-5606.0002505.
32. Chian, S.C. & Bi, J. (2021). "Influence of Grain Size Gradation of Sand Impurities on Strength Behaviour of Cement-Treated Clay", *Acta Geotechnica*. DOI: 10.1007/s11440-020-01090-9.
33. Shen, Z., Jin, D., Pan, Q., Yang, H. & Chian, S.C. (2020). "Probabilistic Analysis of Strip Footings on Spatially Variable Soils with Linearly Increasing Shear Strength", *Computers and Geotechnics*, 126, 103653. DOI: 10.1016/j.compgeo.2020.103653.
34. Qin, C. & Chian, S.C. (2020). "Discretization-based Kinematic Analysis Method to Seismic Stability of Geosynthetic-reinforced Slopes Involving Differing Earthquake Approaches", *International Journal of Geomechanics*, 20(7), 06020010. DOI:10.1061/(ASCE)GM.1943-5622.0001660.
35. Qin, C. & Chian, S.C. (2020). "Revisiting Seismic Active/Passive Earth Pressure in Non-Uniform Cohesive-Frictional Backfill", *International Journal of Geomechanics*, 20(6), 04020058. DOI: 10.1061/(ASCE)GM.1943-5622.0001674.
36. Qin, C. & Chian, S.C. (2020), "Pseudo-dynamic lateral earth pressures on rigid walls with varying cohesive-frictional backfill", *Computers and Geotechnics*, 119, 103289. DOI:10.1016/j.compgeo.2019.103289.
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38. Qin, C., Chian, S.C. & Du, S. (2020), "Revisiting Seismic Slope Stability: Intermediate or Below-The-Toe-Failure?", *Geotechnique*, 70(1), 71-79. DOI:10.1680/jgeot.18. T.001.
39. Bi, J. & Chian, S.C. (2020), "Modelling of 3-Phase Strength Development of Ordinary Portland Cement and Portland Blast Furnace Cement Stabilised Clay", *Geotechnique*, 70(1), 80-89. DOI:10.1680/jgeot.18.p.087.
40. Qin, C. & Chian, S.C. (2019), "Impact of Earthquake Characteristics on Seismic Slope Stability using Modified Pseudo-dynamic Method", *International Journal of Geomechanics*, 19(9), 04019106. DOI:10.1061/(ASCE)GM.1943-5622. 0001489.
41. Chian, S.C., Wilkinson, S.M., Whittle, J.K., Mulyani, R., Alarcon, J.E., Pomonis, A., Saito, K., Fraser, S., Goda, K., Macabuag, J., Offord, M., Hunt-Raby, A.C., Sammonds, P., Franco, G., Stone, H., Ahmed, B., Hughes, F.E., Jirouskova, N.K., Kaminski, S. & Lopez, J. (2019). "Lessons Learnt from the 2009 Padang Indonesia, 2011 Tōhoku Japan and 2016 Muisne Ecuador Earthquakes", *Frontiers in Built Environment*, 5(73). DOI:10.3389/fbuil.2019.00073.
42. Qin, C., Chian, S.C. & Gazetas, G. (2019), "Discussion to Kinematic analysis of seismic slope stability with a discretization technique and pseudo-dynamic approach: a new perspective", *Geotechnique*, 69(11), 1031-1033. DOI:10.1680/jgeot.18.D.011.
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44. Qin, C. & Chian, S.C. (2019), "Pseudo-static/-dynamic solutions of required reinforcement force for steep slopes using discretization-based kinematic analysis", *International Journal of Rock Mechanics and Geotechnical Engineering*, 11(2), 289-299. DOI: 10.1016/j.jrmge.2018.10.002.
45. Chian, S.C. (2019), "Tailoring the Properties of Cement-Treated Clayey Soils", *Geotechnical Design and Practice: Developments in Geotechnical Engineering*, pp. 173-182.

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47. Qin, C., Chian, S.C. & Yu, J. (2018), "Stability Analyses of Initial Collapse and Earthquake-induced Secondary Failure using Discretization-based Kinematic Analysis", *International Journal of Geomechanics*, ASCE, 18(11), 04018155. DOI:10.1061/(ASCE)GM.1943-5622.0001304.
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49. Chian, S.C. (2018), "Reuse of Waste Materials for Civil Engineering Purposes", *Indian Journal of Scientific Research*, 17(2). pp. 11-16.
50. Du, S. & Chian, S.C. (2018), "Excess Pore Pressure Generation in Sand under Non-Uniform Cyclic Strain Triaxial Testing", *Soil Dynamics and Earthquake Engineering*, 109, pp. 119-131. DOI:10.1016/j.soildyn.2018.03.016.
51. Qin, C. & Chian, S.C. (2018), "Seismic bearing capacity of non-uniform soil slopes using discretization-based kinematic analysis considering Rayleigh waves", *Soil Dynamics and Earthquake Engineering*, 109, pp. 23-32. DOI:10.1016/j.soildyn.2018.02.17.
52. Qin, C. & Chian, S.C. (2018), "New Perspective on Seismic Slope Stability Analysis", *International Journal of Geomechanics*, ASCE, 18(7), 06018013. DOI:10.1061/(ASCE)GM.1943-5622.0001170.
53. Qin, C. & Chian, S.C. (2018), "Seismic Ultimate Bearing Capacity of a Hoek-Brown Rock Slope Using Discretization-Based Kinematic Analysis and Pseudodynamic Methods", *International Journal of Geomechanics*, ASCE, 18(6), 04018054. DOI:10.1061/(ASCE)GM.1943-5622.0001147.
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55. Chian, S.C. (2018). "Learning by Identification of Mistakes in Workings in Engineering Modules", *Innovations in Education and Teaching International*, 55(1), pp. 34-43. DOI:10.1080/14703297.2016.1180256.
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57. Qin, C. & Chian, S.C. (2018), "Kinematic analysis of seismic slope stability with a discretization technique and pseudo-dynamic approach: a new perspective", *Geotechnique*, 68(6), pp. 492-503. DOI:10.1680/jgeot.16.P.200.
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63. Zhou, J., Qin, C., Chian, S.C. & Yao, K. (2017). "Determination of Critical Distance for Deep Tunnels with a Longitudinal Water-filled Positioned above Tunnel Roof", *International Journal of Rock Mechanics and Mining Sciences*, 93, pp. 115-123. DOI: 10.1016/j.ijrmms.2016.11.009.
64. Chian, S.C., Chim, Y.Q. & Wong, J.W. (2017). "Influence of Sand Impurities in Cement-Treated Clays", *Geotechnique*, 67(1), pp. 31-41. DOI:10.1680/jgeot.15.P.179.
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### Conferences

1. Chian, S.C., Niu, Y. & Li, Y.E. (2024), "Surface Wave Evaluation of Deep Soil Mixing", Invited Speaker, 3rd International Conference on Architectural, Civil and Environmental (ACE) Forensic Engineering, Seoul, Korea.
2. Chian, S.C. (2023), "Cement Soil Stabilisation in Tropical Environment", 16th International Conference on Structural and Geotechnical Engineering (16ICSGE), Cairo, Egypt.
3. Nagatie, R., Oh, Y.P., Chian, S.C., Lim, K.C. & Chia, W.L.M. (2023), "Fibre Optic Sensor for Pile Load testing in Singapore's High Rise Public Housing Projects", 2nd Geotechnical Society of Singapore and Malaysian Geotechnical Society Conference (2<sup>nd</sup> GeoSS-MGS 2023), Singapore.
4. Tee, Z.H., Yip, S., Kok, D.S., Lee, C.K., Ng, C.C.D., Ong, C.W.V. & Chian, S.C. (2023), "Characterisation of Engineering properties of DCM based on Case Study of projects at Changi & Tekong", 21st Southeast Asian Geotechnical Conference (SEAGC-2023), Bangkok, Thailand.
5. Chian, S.C. (2023), Cement in Ground Engineering, Keynote Speaker, 2nd Belt and Road International Concrete Technology Symposium, Guangzhou, China.
6. Chian, S.C. (2023), "Cement Soil Stabilisation in Tropical Environment", Keynote Speaker, Innovations and Sustainability in Concrete Technology: Building a Stronger Future, American Concrete Institute – Singapore Chapter 2023 Annual Seminar, Singapore.
7. Chian, S.C. (2023), "Centrifuge Modelling of Uplift Mechanism of Underground Structures subject to Earthquake Induced Soil Liquefaction", Theme Lecture, 14th Congress of the International Association for Engineering Geology and the Environment (XIV-IAEG), Chengdu, China.
8. Chian, S.C. (2023), "Data Driven Solutions for an Imperfect Geotechnical Engineering", Invited Lecture, International Geotechnical Engineering Workshop, Issyk-Kul, Kyrgyzstan.
9. Leung, C.F., Vergote, T.A. & Chian, S.C. (2023), "Creep after Surcharge Unloading", Invited Lecture, 17<sup>th</sup> Asian Regional Conference on Soil Mechanics and Geotechnical Engineering (17ARC-2023), Astana, Kazakhstan.
10. Chian, S.C., Bi, J., Halai, H.D., Lee, N.G.L.H. & Leung, C.F. (2023), "Filling Missing Soil Data using Machine Learning", 17<sup>th</sup> Asian Regional Conference on Soil Mechanics and Geotechnical Engineering (17ARC-2023), Astana, Kazakhstan.

11. Chian, S.C. (2023), "Opportunities in Sustainable Conversion of Soil Waste to Useful Fill and Building Materials", Plenary Lecture, International Conference on Sustainable Infrastructure: Innovation, Opportunities and Challenges (SIIOC-2023), Mangalore, India.
12. Chian, S.C. (2023), "Resource Recovery of Waste Soil as Reclamation Fill Material", Invited Lecture, 7<sup>th</sup> International Conference on Civil Engineering (7ICOCE-2023), Singapore.
13. Chian, S.C. & Du, S. (2022), "Understanding Excess Pore Water Pressure Dissipation in Soil Liquefaction Mitigation", Special Theme Lecture, 4th International Conference on Performance Based Design in Earthquake Geotechnical Engineering (PBD-IV), Beijing, China.
14. Niu, Y., Li, Y.E. & Chian, S.C. (2022), "Full Phase Velocity Spectrum Inversion of Multi-mode Rayleigh Waves", 2nd EAGE/SEG Workshop on Geophysical Aspects of Smart Cities, Hong Kong, China.
15. Lan, H., Yeoh, K.W. & Chian, S.C. (2022), "Evaluation of Reality Capture technologies for Ground Settlement Monitoring", 22nd International Conference on Construction Applications of Virtual Reality (CONVR2022), Seoul, South Korea, Paper 7974.
16. Yang, J., Chian, S.C. & Wong, S. (2022), "Feasibility of Unmanned Aerial Vehicle Based Photogrammetry on Volume Estimation and Its Application", 33<sup>th</sup> KKHTCNN Symposium on Civil Engineering, Singapore.
17. Niu, Y., Chian, S.C., Li, Y.E. & Fang, G. (2022), "Lab-scale Small-strain Stiffness Measurement Based on Distributed Acoustic Sensing", 33<sup>th</sup> KKHTCNN Symposium on Civil Engineering, Singapore.
18. Chian, S.C. (2022), "Estimating Earthquake Damage and Its Role in Disaster Preparedness", Keynote Lecture, International Symposium on Multi-hazards Warning & Community Resilience (MWCR-2022), Amrita Vishwa Vidyapeetham, India.
19. Chian, S.C. (2022), "Why Adoption of Data Driven Methodologies Works for Geotechnical Engineering", Keynote Lecture, 4th International Conference on Information Technology in Geo-Engineering (4ICITG), Singapore.
20. Chian, S.C., Lee, F.H., Goh, S.H., Leung, C.F. & Chew, S.H. (2022), "Development of NUS's Mark II Geotechnical Beam Centrifuge", 10th International Conference on Physical Modelling in Geotechnics (ICPMG2022), Daejeon, South Korea.
21. Wong, S., Chian, S.C., Yeoh, K.-W., Foo, C.C. & Goh, K.H., Shi, W.L. & Tan, K.J. (2022), "Ground Settlement and Excavation Volume Measurement using Remote Sensing Photogrammetry", 20th International Conference on Soil Mechanics and Geotechnical Engineering (20ICSMGE), Sydney, Australia.
22. Chian, S.C. & Fu, Y.Y. (2022), "Calcination of Singapore Marine Clay", 20th International Conference on Soil Mechanics and Geotechnical Engineering (20ICSMGE), Sydney, Australia.
23. Qin, C. & Chian, S.C. (2022), "Centrifuge Modelling of Earthquake Induced Submarine Landslides", 20th International Conference on Soil Mechanics and Geotechnical Engineering (20ICSMGE), Sydney, Australia.
24. Chian, S.C. (2021), "Rejuvenating Centrifuge Modelling at NUS", Keynote Lecture, 3rd Asian Conference on Physical Modelling in Geotechnics (Asiafuge2021), Singapore.
25. Chian, S.C. (2021), "How Well Does Equivalent Uniform Cyclic Loading Represent Irregular Earthquake Loadings", Keynote Lecture, 8th Indian Young Geotechnical Engineers Conference (8IYGEC), Chennai, India.

26. Chian, S.C. (2021), "Post Earthquake Reconnaissance: Theories versus Observations", Keynote Lecture, Virtual Conference on Disaster Risk Reduction, National Institute of Disaster Management (NIDM), New Delhi, India.
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