

JIDONG ZHAO

Curriculum Vitae

Jidong Zhao is a Professor of Computational Geomechanics in the Department of Civil and Environmental Engineering and the Director of the Computational Granular Mechanics Lab at the Hong Kong University of Science and Technology. He holds a prestigious Chang Jiang Scholar Chair Professorship awarded by the Ministry of Education, China. Dr. Zhao obtained both his bachelor's degree and Ph.D. from Tsinghua University. Prior to joining HKUST in 2008, he spent five years first as a research fellow and later as a University Lecturer at the University of Newcastle, Australia.

Dr. Zhao's research focuses on developing scalable computational methods for comprehensive simulation, analysis, and comprehension of the intricate multiscale mechanics and physics of granular media systems. His work contributes significantly to understanding the fundamental behaviors that impact various engineering and industrial processes. He is renowned for his innovative micromechanics models and computational multiscale modeling approaches for saturated and partially saturated granular media. His research sheds light on the complex connections between grain-scale and pore-scale physics, encompassing particle morphology, frictional contact, sliding and rolling, and multi-phase pore fluid flows, that account for intriguing phenomena such as strain localization, liquefaction, anisotropy, collapse, failure, and phase transitions in granular media.

The computational tools developed by Dr. Zhao offer cutting-edge predictive and design capabilities, addressing critical geohazards like foundation and embankment failures, landslides, debris flows, and providing solutions for challenges related to climate change and energy crises, such as deep underground carbon sequestration and safe offshore energy extraction (e.g., methane gas hydrate), and thawing-induced permafrost melting. He integrates his computational tools to create an advanced physics-based scientific computing platform, enhanced by data science, machine learning, and sensing technology, to develop futuristic digital twin applications for engineering and industrial processes. Moreover, his team has made significant advancements in providing innovative computational solutions for metal additive manufacturing and pharmaceutical tablet manufacturing.

Currently, Dr. Zhao serves as a co-Editor-in-Chief for *Computers and Geotechnics* (Elsevier), editor for *Granular Matter* (Springer), and associate editor for the *Journal of Engineering Mechanics* (ASCE). He is also on the editorial boards of the *International Journal for Numerical and Analytical Methods in Geomechanics* (Wiley), *Acta Geotechnica* (Springer), and *Science Progress* (SAGE). He holds leadership roles in international geomechanics committees and serves as grant assessor for funding agencies including ERC, DFG, NSERC, ARC, NCN, and RGC. Dr Zhao's research is supported by various funding bodies, including the Research Grants Council of Hong Kong, the National Natural Science Foundation of China, the Croucher Foundation, and the K.C. Wong Education Foundation, among others. In 2024, he was awarded a theme-based research project totally HK\$62.893 millions from RGC to develop a groundbreaking digital twin coast for Hong Kong.

Dr Zhao has authored over 150 papers in peer-reviewed journals and 140 conference papers, with over 8,900 citations on Google Scholar and a h-index of 52. He has delivered over 100 invited keynotes or lectures on occasions of international conferences or in top institutes. He has received multiple prestigious awards, including the Excellent Ph.D. Thesis Award from Tsinghua University, the University of Newcastle Research Fellowship Award, the "Scott Sloan Best Paper Award" in 2018 and 2021, the Granular Matter "Top 5 Cited Articles" Award in 2018, the first-class Natural Science Award of MOE in 2021, and the JSPS Invitational Fellowship in 2023. Dr Zhao has supervised over 20 postgraduate students (including 15 Ph.D. students) and 20 postdoctoral fellows. He teaches both undergraduate and postgraduate level courses at HKUST.

CONTACT

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EDUCATION

1997-2002 Ph.D. in Geotechnical Engineering, Tsinghua University

1992-1997 Bachelor in Hydraulic Engineering, Tsinghua University

EMPLOYMENT

07/2020–Present Professor, Department of Civil & Environmental Engineering, HKUST

01/2015–06/2020 Associate Professor, Department of Civil & Environmental Eng., HKUST

09/2008–12/2014 Assistant Professor, Department of Civil & Environmental Eng., HKUST

01/2007–09/2008 Lecturer, Dept of Civil & Environ. Eng., Uni. of Newcastle, Australia

07/2003–12/2006 Research Fellow, Dept. of Civil & Environ Eng., Uni. of Newcastle, Australia

02/2003–06/2003 Research Associate, Civil & Structural Eng., Hong Kong Polytechnic University

09/1997–07/2002 Research Assistant, Dept of Hydraulic Eng., Tsinghua University, Beijing

AWARDS, EDITORSHIPS & RECOGNITIONS

2024 Appointed to be **Co-Editor-In-Chief** for *Computers and Geotechnics* (Elsevier)

2024 Geo-Shanghai Best Paper Award (Geo-Shanghai 2024)

2023 JSPS Invitational Fellowship

2023 Invited Contribution for *Nature Reviews Physics*

2022 Scott Sloan Best Paper Award 2021 (*Computers and Geotechnics*, Elsevier)

2021 Natural Science Award (first class), Ministry of Education, China

2021 Chang Jiang Scholar Chair Professor, Ministry of Education, China

2020 Co-Editor for *Computers and Geotechnics* (Elsevier)

2019 Associate Editor for *Journal of Engineering Mechanics* (ASCE)

2019 Editorial board: *Acta Geotechnica*, *Int. J. Numer. Analy. Meth. Geomech.*, *Science Progress*

2018 Editor for *Granular Matter* (Springer Nature)

2012	Editorial board for <i>Computers and Geotechnics</i> (Elsevier)
2019	Scott Sloan Best Paper Award 2018 (<i>Computers and Geotechnics</i> , Elsevier)
2018	2018 Outstanding Paper Award <i>Computers and Geotechnics</i> (Elsevier)
2018	Top 5 Cited Articles Award for <i>Granular Matter</i> (Springer Nature)
2016	K.C. Wong Education Foundation Academic Exchange Award
2007	University of Newcastle Research Fellowship Award (Australia)
2002	Excellent PhD Thesis Award of Tsinghua University (China)
1992-2002	Miscellaneous scholarships and awards at Tsinghua University (China)

SELECTIVE KEYNOTE/THEME LECTURES

2024	5th Aspherix & CFDEM Conference, Vienna, Austria, 26-27 September 2024
2024	14th International Symposium on Landslides, Chambéry, France, 8-12 July 2024
2024	Granular Matter Webinar (online), Invited by Granular Matter Journal, 26 April 2024
2023	X International Conference of Computational Methods for Coupled Problems in Science and Engineering, Chania, Crete, Greece, 5-7 June 2023
2023	International Symposium on “Numerical Analysis of Geomaterials”, Assisi, Italy, 9-12 May 2023
2023	14th National Conference on Numerical and Analytical Methods in Geomechanics, Wuhan, China, 7-9 Apr 2023
2022	17th Symposium of Earthquake Engineering, IIT Roorkee, India, 14-17 Nov 2022
2022	Beijing Jiao Tong University “Frontier of Geotechnical Engineering Open Lecture”, Invited 3-hour Online Lecture, 13 Nov 2022
2022	4th International Conference on Performance-based Design in Earthquake Geotechnical Engineering (PBD-IV), Beijing, 15-17 July 2022
2022	International Symposium of Intelligent Geotechnics, Hong Kong, 10-11 June 2022
2022	HKSTAM Distinguished Lecture, Hong Kong, 23 April 2022
2022	Special Invited Lecture by National Central Facility for Earthquake Engineering Simulation, Tianjin University, 17 April 2022
2022	State of the Art (SOA) Lecture , Geo-congress 2022, NC, USA, 20-23 Mar 2022
2021	International Workshop on Computational Mechanics of Granular Materials, Belarusian State University and Dalian University of Technology, 23 Dec 2021
2021	Annual Workshop on “Marine Geology and Carbon Sequestration”, Key Laboratory of Zhejiang Province on Marine Geology and Resources, 25 Dec 2021
2021	3rd International Symposium on Computational Particle Technology (CPT 2021), Melbourne and Suzhou (hybrid mode), 17-21 Nov 2021
2021	2021 Westlake International Symposium in Engineering, Hangzhou, 26-27 Oct 2021
2021	VII International Conference on Particle-based Methods (PARTICLES 2021), Hamburg, Germany, 4-6 Oct 2021

- 2021** 9th Machine-Ground Interaction Consortium Meeting (MaGIC 2021), Grainger Institute for Engineering, University of Wisconsin-Madison, 21-23 Sep 2021.
- 2021** Second International Workshop on Numerical Simulation Methods for Large Deformation Problems in Geotechnical Engineering (2nd INLGEO), Shanghai, China, 18-19 September 2021
- 2021** “Water Science Lecture” by State Key Laboratory of Water Resources and Hydropower Engineering Science (Wuhan University), Wuhan, 28 Aug 2021
- 2021** Powders and Grains 2021, Buenos Aires, Argentina, 5-9 July 2021
- 2021** Int’l Research Network GeoMech Online Symposium, Twente, 18-19 Jan 2021
- 2020** IAS Workshop on Emerging Scales in Granular Media, Hong Kong, 14-16 Jan 2020
- 2019** DEM 8, Twente, Enschede, Netherland, 21-26 July 2019 (held every 3 or 4 years)
- 2019** Chinesisch-Deutschen Zentrum für Wissenschaftsförderung Workshop “Granular phase transitions: from fundamentals to applications”, Kloster Banz, Germany, 14-17 Apr 2019
- 2019** 2019 Lorentz Center Workshop on “Granular Matter Across Scales”, Leiden, Netherlands, 18-22 March 2019
- 2018** First International Symposium on Debris Flow Mechanisms and Mitigation for Sustainable Development, Hong Kong, 2 December 2018,
- 2018** 4th National Conference on Computational Mechanics of Granular Materials (CMGM-2018), Xiamen, China, 6-8 July 2018
- 2018** 2nd Yet Another Discrete Element (YADE) Workshop, Aix-en-Provence, France, 26-27 April 2018
- 2017** 15th International Conference of International Association for Computer Methods and Advances in Geomechanics (15IACMAG), Wuhan, China, 19-23 October 2017
- 2017** 11th International Workshop on Bifurcation and Degradation in Geomaterials (IWBDG), Limassol, Cyprus, 21-25 May 2017
- 2016** IAS Program on Computational & Mathematical Problems, Hong Kong, 25-29 January 2016
- 2016** International Symposium of Plasticity 2016, Hawaii, USA, 3-9 January 2016.

RESEARCH

Research Grants Awarded

(PI/PC: Principal Investigator/Coordinator; Co-PI: Co-Principal Investigator; Co-I: Co-Investigator)

External Grants

- 2025** Research Grants Council of Hong Kong (RGC-HK), Theme-based Research Scheme (TRS) #T22-607/24-N: *A Digital Twin for Enhancing Coastal Resilience against Extreme Storm Surges in Hong Kong*. HK\$62,893,000. **(PC)**
- 2025** National Natural Science Foundation of China (NSFC), Key Project # 52439001: *A general purpose multiscale, multiphysics computational platform for granular media*, CNY 2,300,000. **(PI)**
- 2024** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16212724: *A unified peridynamics theory on modeling fully coupled thermal-hydro-mechanical behaviors in geomaterials*. HK\$1,134,931. **(PI)**
- 2024** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16208224: *Machine learning-empowering multiscale modelling for granular materials from grain-scale physics to engineering-scale applications*. HK\$1,134,931. **(Co-I)**
- 2024** Research Grants Council of Hong Kong (RGC-HK), Theme-based Research Scheme (TRS) #T22-606/23-R: *Digital Twin-empowered Landslide Emergency Risk Management*. HK\$62,071,000. **(Co-PI)**
- 2023** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16203123: *Hybrid resolved-unresolved CFD-DEM coupling for multiscale modeling of complex fluid and granular flows*. HK\$1,193,846. **(PI)**
- 2023** K.C. Wong Education Foundation Conference Sponsorship Project KCWF20EG01: *International Symposium on Computational Geomechanics*, HK\$367,500. **(PI)**
- 2023** Research Grants Council of Hong Kong (RGC-HK), Collaborative Research Fund (CRF) #C7082-22G: *The Poshan drainage tunnel system as an intensively instrumented hillslope critical zone observatory to explore groundwater dynamics and its engineering and ecological implications*. HK\$2,785,200. **(Co-PI)**
- 2022** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16206322: *A combined physics-informed deep learning and multiscale modelling framework for simulation of thaw-induced landslide in permafrost*. HK\$802,220. **(Co-I)**
- 2021** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16211221: *Multiscale modeling of thermo-hydro-mechanical (THM) behavior in granular sediments for gas hydrate recovery*. HK\$911,317. **(PI)**
- 2020** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16208720: *Multiscale modeling of dynamic crushing of saturated granular materials*. HK\$873,995. **(PI)**
- 2020** National Natural Science Foundation of China (NSFC), General Program Project #11972030: *A multi-scale multi-physics modeling framework accounting for fluid-particle-structure interactions for debris flow mitigation*, CNY 640,000. **(PI)**

- 2020** China National Postdoctoral Council under the Ministry of Human Resources and Social Security, Hong Kong Scholars Program by (HKSP) #HKSP20EG01: *Modeling of sandy marine deposits*, HK\$360,000. **(PI)**
- 2020** PROCORE-France/Hong Kong Joint Research Travel Grant, #F-HKUST601/19: Multiscale Modeling of Granular soils in consideration of Realistic Grain Shapes (MuMoG). HK\$45,000. **(PI)**
- 2019** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16207319: Multiscale modeling of large deformation in offshore geotechnics, HK\$748,300. **(PI)**
- 2019** K.C. Wong Education Foundation Conference Sponsorship Project KCWF20EG01: International Workshop on Emerging Scales in Granular Media, HK\$153,600. **(PI)**
- 2019** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16201419: Theoretical and experimental study of consolidation settlement of sandy marine deposits based on homogenization theory, HK\$534,500. **(PI)**
- 2019** Croucher Foundation Conference/Seminar Sponsorship Project CF19EG02: International Workshop on Multiscale Modeling of Granular Matter, HK\$100,000. **(PI)**
- 2018** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16205418: Modelling entrainment, inter-phase mass exchange and surge dynamics of debris flows and their interaction with flexible barriers, HK\$632,421. **(PI)**
- 2018** China National Postdoctoral Council under the Ministry of Human Resources and Social Security, Hong Kong Scholars Program by (HKSP) #HKSP18EG02: Multiscale modeling of granular media, HK\$362,070. **(PI)**
- 2018** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #11214218: Micromechanical investigation of bonded granular geo-materials, HK\$632,421. **(Co-I)**
- 2017** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #16210017: Hierarchical multiscale modelling of compaction localization in high-porosity sandstone, HK\$582,000. **(PI)**
- 2016** Research Grants Council of Hong Kong (RGC-HK), General Research Fund Collaborative Research Fund (CRF) #C6012-15G: Coping with landslide risks in Hong Kong under extreme storms: storm scenarios, cascading landslide hazards and multi-hazard risk assessment, HK\$6,236,628. **(Co-PI)**
- 2016** National Natural Science Foundation of China (NSFC), General Program Project #51679207: Multiscale modeling of granular sands considering particle morphology and pore water pressure, CNY 630,000. **(PI)**
- 2015** Research Grants Council of Hong Kong (RGC-HK), Theme-based Project #T22-603/15N: Understanding and mitigating debris flow risks for a sustainable Hong Kong, HK\$33,200,000. **(Co-I)**
- 2014** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #17200114: An experimental approach to map changes in soil particle morphology, HK\$500,000. **(Co-I)**
- 2012** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #623211: Characterization of Thermal Failure in Natural Soils, HK\$783,374. **(PI)**

- 2011** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #622910: Towards a Statistical Mechanics Based Theory for Granular Plasticity, HK\$772,800. **(PI)**
- 2010** Research Grants Council of Hong Kong (RGC-HK), General Research Fund (GRF) #623609: Micro–macro computational modeling of collapse problems in geomaterials, HK\$1,108,600. **(PI)**

Internal Grants

- 2024** UGC Research Infrastructure Grant – HKUST Development Grant for new Group Research Project (#DG24EG12), HK\$200,000. **(PI)**
- 2024** HKUST Civil & Environmental Engineering Department Match Fund for shortlisted Large Project Proposal, HK\$100,000. **(PI)**
- 2024** HKUST Development Grant for New Group Research Project. HK\$200,000. **(PI)**
- 2024** HKUST Office for Institutional Advancement - International Conference Sponsorship Scheme, HK\$50,000. **(PI)**
- 2023** HKUST Distinguished Civil & Environmental Engineering Workshop Fund, HK\$100,000. **(PI)**
- 2023** HKUST IAS Program sponsorship: International Symposium on Computational Geomechanics, HK\$300,000. **(PI)**
- 2023** UGC Research Infrastructure Innovative Exploratory Grant (IEG22EG01): Digital Twin for Laser Melt Jetting in Metal Additive Manufacturing. HK\$532,720. **(PI)**
- 2021** HKUST Development Grant for New Group Research Project. HK\$200,000. **(PI)**
- 2021** UGC Research Matching Grants (RMGS20EG11/12). HK\$51,947. **(PI)**
- 2021** HKUST Research Infrastructure Match Grant for RGC GRF. HK\$30,000. **(PI)**
- 2020** HKUST Research Infrastructure Match Grant for RGC GRF. HK\$30,000. **(PI)**
- 2019** HKUST Distinguished Civil & Environmental Engineering Workshop Fund, HK\$100,000. **(PI)**
- 2019** HKUST Research Infrastructure Match Grant for RGC GRF #16201419. HK\$30,000. **(PI)**
- 2019** HKUST Research Infrastructure Match Grant for RGC GRF #16205418. HK\$30,000. **(PI)**
- 2019** HKUST Sponsorship Scheme for Targeted Strategic Partnership Waterloo Project FB907, HK\$90,000. **(PI)**
- 2018** HKUST Research Infrastructure Match Grant for RGC GRF #16210017. HK\$30,000. **(PI)**
- 2017** UROP Research Grant: Computer Visualization of Sand Grains, HK\$5,000. **(PI)**
- 2014** Research Equipment Competition #REC09/10.EG01: A heterogeneous, high-performance CPU-GPU cluster for big data and computational sciences research, HK\$1,408,000 **(Co-I)**
- 2013** RGC DAG #DAG13EG04S: The mechanics and failure mechanisms of fiber-reinforced sand. 2013-2014. HK\$50,700. **(PI)**
- 2013** HKUST Research Infrastructure Grant – match of near-miss GRF grant #FSGRF14EG22: An advanced theoretical and experimental investigation of the anisotropic strength and deformation characteristics of fiber-reinforced sand, HK\$50,000. **(PI)**

- 2012** HKUST Research Infrastructure Grant – match of near-miss GRF grant #FSGRF13EG13: The mechanics and failure mechanism of fibre-reinforced sand, HK\$105,000. **(PI)**
- 2012** HKUST Postdoc Fellowship Matching Fund: Thermal Failure in Natural Soils and Geostuctures Impacted by Climate Change, HK\$162,000. **(PI)**
- 2009** HKUST Postdoc Fellowship Matching Fund: Anisotropy and Critical State in Granular Materials, HK\$162,000. **(PI)**
- 2009** Research Equipment Competition #REC09/10.EG01: *An Integrated Multi-Axial Testing System for Critical Study of Failures in Soils and Geo-structures*, HK\$765,000. **(PI)**
- 2009** Research Equipment Competition #REC09/10.EG06: *A Cloud-computing Center for Supporting Large-scale Computation in Multidisciplinary Research*, HK\$730,000. **(Co-I)**
- 2008** RGC/DAG #DAG08/09.EG04: *Experimental and Numerical Shakedown Analysis of Asphalt Pavements in Hong Kong*, HK\$253,400. **(PI)**
- 2008** School of Engineering #SBI08/09.EG02: *Micromechanics-based Modeling of Collapse in Soils and Earth Structures*, HK\$300,000. **(PI)**

Other Grants

- 2008** Australian Research Council Discovery Project (ARC-DP) #DP0879178: *Multi-scale modeling of collapse problems in geo-materials by strain gradient plasticity*, AU\$120,000. **(PI)**
- 2007** Research Grant Committee of University of Newcastle, University Research Fellowship #P018115: *Theoretical and numerical analyses of instabilities in geomaterials and geotechnical engineering*, (five-year project) AU\$521,270. **(PI)**
- 2006** Travel grants by Research Grant Committee of University of Newcastle, AU\$15,000. **(PI)**

Scholarly Publications

(# Research student; † Postdoc fellow)

Citation Metrics (as of 10 Oct 2024)

	Google Scholar	Scopus	Web of Science
Citations	8,901	7,263	6,381
H-index	52	47	45

Edited Book

- I** Chau K.T., Zhao J.D. (2015). Bifurcation and Degradation of Geomaterials in the New Millennium (*Proceedings of the 10th International Workshop on Bifurcation and Degradation in Geomaterials*). Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. Print ISBN: 978-3-319-13505-2; Online ISBN: 978-3-319-13506-9. doi: <https://doi.org/10.1007/978-3-319-13506-9>.

Book Chapters

- I** Liang W.J.[#], Zhao J.D., Soga K. (2021). Multiscale modeling of anchor pull-out in sand. In Barla M., Di Donna A. and Sterpi D. (eds.) *Challenges and Innovations in Geomechanics*:

Proceedings of the 16th International conference of IACMAG – Volume I. Springer Nature Switzerland AG, Gewerbestrasse, Switzerland. pp. 787-793.

doi: https://doi.org/10.1007/978-3-030-64514-4_84.

- 2 Zhao J.D., Liang W.J.[#] (2018). Multiscale modeling of large deformation in geomechanics: a coupled MPM-DEM approach. In Wu, W. & Yu, H.S. (eds.) *Proceedings of China-Europe Conference on Geotechnical Engineering*. Springer Series in Geomechanics and Geoengineering. Springer Nature Switzerland AG, Gewerbestrasse, Switzerland. pp. 449-452.
doi: https://doi.org/10.1007/978-3-319-97112-4_101 .
- 3 Zhu F.[#], Zhao J.D. (2018). Simulation of one-dimensional compression of sand considering irregular grain shapes and grain breakage. Wu, W. and Yu, H.S. (eds.) *Proceedings of China-Europe Conference on Geotechnical Engineering*. Springer Series in Geomechanics and Geoengineering. Springer Nature Switzerland AG, Gewerbestrasse, Switzerland. pp 279-282.
doi: https://doi.org/10.1007/978-3-319-97112-4_63 .
- 4 Zhao J.D. (2017). Hierarchical Multiscale Modeling of Strain Localization in Granular Materials: A Condensed Overview and Perspectives. Papamichos E, Papanastasiou P, Pasternak E. and Dyskin A. (eds.) *Bifurcation and Degradation of Geomaterials with Engineering Applications*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp 349-359. Chapter doi: https://doi.org/10.1007/978-3-319-56397-8_44.
- 5 Wu H.R.[#], Guo N.[†], Zhao J.D. (2017). Borehole instabilities in granular rocks revisited: A multiscale perspective In: Papamichos E, Papanastasiou P, Pasternak E. and Dyskin A. (eds.) *Bifurcation and Degradation of Geomaterials with Engineering Applications*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp 433-439.
Chapter doi: https://doi.org/10.1007/978-3-319-56397-8_54 .
- 6 Guo N.[#], Zhao J.D. (2015). A multiscale investigation of strain localization in cohesionless sand. In: Chau K.T. & Zhao J.D. (eds.) *Bifurcation and Degradation of Geomaterials in the New Millennium*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp 121-126.
Chapter doi: https://doi.org/10.1007/978-3-319-13506-9_18 .
- 7 Gao Z.W.[#], Zhao J.D. (2015). Fabric Evolution and its affects on strain localization in sand? In: Chau K.T. & Zhao J.D. (eds.) *Bifurcation and Degradation of Geomaterials in the New Millennium*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp 21-26. Chapter doi: https://doi.org/10.1007/978-3-319-13506-9_4.
- 8 Zhao J.D., Guo N.[#] (2015). Bridging micro – and macro in granular media: A computational multiscale paradigm. In K. Soga, K. Kumar, G. Biscontin and M. Kuo (Eds.) *Geomechanics from Micro to Macro*, CRC Press, Taylor & Francis, London. Vol. I, pp. 747-752.
Chapter doi: <https://doi.org/10.1201/b17395-134> .
- 9 Liu Z.C.[#], Zhao J.D., Mollon G.[†] (2015). The influence of particle shape for granular media: A Fourier-shape-descriptor-based micromechanical study. K. Soga, K. Kumar, G. Biscontin and M. Kuo (Eds.) *Geomechanics from Micro to Macro*, CRC Press, Taylor & Francis, London. Vol. I, pp. 237-242.
Chapter doi: <https://doi.org/10.1201/b17395-41> .

- 10** Gao Z.W.[#], Zhao J.D., Li X.S., Dafalias Y.F. (2015). Constitutive modeling of fabric anisotropy in sand. K. Soga, K. Kumar, G. Biscontin and M. Kuo (Eds.) *Geomechanics from Micro to Macro*. CRC Press, Taylor & Francis, London. Vol. 1, pp. 621-626.
Chapter doi: <https://doi.org/10.1201/b17395-111> .
- 11** Zhao J.D., Gao Z.W.[#] (2014). Modelling non-coaxiality and strain localisation in sand the role of fabric and its evolution. In F. Oka, A. Murakami, R. Uzuoka and S. Kimoto (Eds.) *Computer Methods and Recent Advances in Geomechanics*. CRC Press, Taylor & Francis, London. pp. 1367-1372.
Chapter doi: <https://doi.org/10.1201/b17435-241> .
- 12** Zhao J.D., Guo N.[#], Li X.S. (2013). Unique quantification of critical state in granular media considering fabric anisotropy. In: Yang, Q., Zhang, J.M., Zheng, H. and Yao Y. (eds.) *Constitutive Modeling of Geomaterials: Advances and New Applications*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp.247-252.
Chapter doi: https://doi.org/10.1007/978-3-642-32814-5_31 .
- 13** Zhao J.D., Shan T.[#] (2013). Discrete modeling of fluid-particle interaction in soils. In: Yang, Q., Zhang, J.-M., Zheng, H. and Yao Y. (eds.) *Constitutive Modeling of Geomaterials: Advances and New Applications*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp. 297-301.
Chapter doi: https://doi.org/10.1007/978-3-642-32814-5_40 .
- 14** Gao Z.W.[#], Zhao J.D. (2013). Modeling the dilatancy of overconsolidated clay. In: Yang, Q., Zhang, J.M., Zheng, H. and Yao Y. (eds.) *Constitutive Modeling of Geomaterials: Advances and New Applications*. Springer Series in Geomechanics and Geoengineering. Springer Heidelberg, Berlin, Germany. pp. 541-545.
Chapter doi: https://doi.org/10.1007/978-3-642-32814-5_73 .
- 15** Zhao J.D., Guo N.[#] (2011). Signature of anisotropy in liquefiable sand under undrained shear. In Boneli, S., Dascalu, C. and Nicot, F. (eds.) *Advances in Bifurcation and Degradation in Geomaterials*. Springer Series in Geomechanics and Geoengineering. Springer Dordrecht, Netherlands. pp.45-51.
Chapter doi: https://doi.org/10.1007/978-94-007-1421-2_6 .
- 16** Guo N.[#], Zhao J.D. (2011). Bimodal Character of Induced Anisotropy in Granular Materials under Undrained Shear. In M.J. Jiang, F. Liu and M. Bolton (Eds.) *Geomechanics and Geotechnics: From Micro to Macro*. CRC Press, Taylor & Francis, London. pp. 513-517.
Chapter doi: <https://doi.org/10.1201/b10528-83> .
- 17** Zhao J.D., Sheng, D.C., Sloan, S.W. (2007). Microstructural Effects on Cavity Expansion of Soil Cylinder. In S. Pietruszczak and G.N. Pande (Eds.) *Numerical Models in Geomechanics*. Taylor & Francis, London. pp. 715-720.
Chapter doi: <https://doi.org/10.1201/NOE0415440271.ch103> .

International Journal Articles

2024

- 1 Shi X.S., Zeng Y.W., Zhao J.D., Bian X., Liu J.Y. (2024). Estimation of compression behavior of granular soils considering initial density effect based on equivalent concept. *Acta Geotechnica*. Accepted.
doi: tbc.
- 2 Lai Z.S., Feng Y.T., Zhao J.D., Huang L.C. (2024). Unifying the contact in signed distance field-based and conventional discrete element methods. *Computers and Geotechnics*. 176: 106764.
doi: [10.1016/j.compgeo.2024.106764](https://doi.org/10.1016/j.compgeo.2024.106764).
- 3 Yu T., Zhao S.W., Zhao J.D. (2024). A mechanism-based optimization strategy with adaptive laser power for laser powder bed fusion. *Additive Manufacturing*. 92: 104403.
doi: [10.1016/j.addma.2024.104403](https://doi.org/10.1016/j.addma.2024.104403).
- 4 Liang W.J., Fang H.C., Yin Z.Y., Zhao J.D. (2024). A mortar segment-to-segment frictional contact approach in material point method. *Computer Methods in Applied Mechanics and Engineering*. 431: 117294.
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- I11** Zhao J.D., Guo N. (2012). A micromechanical study on the shear strength in granular materials: the role of particle shape. *The 23rd International Congress of Theoretical and Applied Mechanics (ICTAM2012)*. Beijing, China, 19-24 August 2012.
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- I24** Gao Z.W., Zhao J.D. (2011). The strength and constitutive behavior of geomaterials with cross anisotropy. *The 15th Annual Conference of Hong Kong Society of Theoretical and Applied Mechanics (HKSTAM)*. Hong Kong and Macau, 11-12 March 2011.
- I25** Zhao J.D., Guo N. (2011). The role of anisotropy in characterizing the states of liquefaction, phase transformation and critical state in granular media. *The 15th Annual Conference of*

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- 132 Zhao J.D., Sheng D.C., Sloan S.W. (2007). Gradient dependent limit theorems for elastoplastic geomaterials, *International Workshop on Constitutive Modeling-Development, Implementation, Evaluation, and Application*. Hong Kong, China, 12-13 January 2007.
- 133 Zhao J.D., Sheng D.C., Abbo A.J., Sloan S.W. (2006). Effect of clay structure degradation on settlement of embankment. *Australian Geomechanics Society Sydney Chapter Mini-Symposium: Soft Ground Engineering*. 11 October 2006, Sydney, Australia.
- 134 Sheng D.C., Zhao J.D., Rouainia M. (2005). Use of a structure model in analysis of trial embankments on soft clay. *The 11th International Conference of the International Association of Computer Methods and Advances in Geomechanics*. Torino, Italy, 19-24 June 2005.
- 135 Rouainia M., Sheng D.C., Zhao J.D. (2005). Influence of structure degradation on the behaviour of embankments on soft soil. *13th ACME Conference*. University of Sheffield, UK, 21-22 March 2005.

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- 137** Chau K.T., Zhao J.D. (2004). Fluttering instability in geomaterials: really or fantasy? *Computational Mechanics, WCCM VI in conjunction with APCOM'04*. Beijing, China, 5-10 Sept 2004.
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- 139** Zhou W.Y., Zhao J.D., Yang Q., Chang S. (2003). Forward numerical model for microseismicity induced by hydraulic fracturing in rock. *The 6th SEGJ (Society of Exploration Geophysicists of Japan) International Symposium-Imaging Technology*. Tokyo, Japan, 22-24 January 2003.
- 140** Zhou W.Y., Liu Y.G., Zhao J.D. (2001). Rheological damage fracture model for slope stability analysis, in (S. Valliappan and N. Khalili eds.) *Computational Mechanics-New Frontiers for New Millennium (APCOM'01)*. Sydney, Australia, Nov. 2001.
- 141** Zhou W.Y., Zhang J.S., Zhao J.D. (2000). Case history of the Three Gorges Dam in China. *The 9th Conference of International Society for Rock Mechanics (ISRM)*. Paris, France, 10 Sept 2000.
- 142** Zhou W.Y., Zhao J.D., Yang R.Q. (2000). Stability analysis of Ertan Arch Dam and its prototype observation. *GeoEng2000*, Melbourne, Australia, 19-24 Nov 2000.
- 143** Zhou W.Y., Zhao J.D., Yang R.Q., Yang Q. (1999). Grouting effects at Ertan arch dam site. *International conference on anchoring and grouting towards the new century*. Guangzhou, China, 6-9 Oct 1999.

Publications – Others (thesis)

- 1** Zhao J.D. (2002). *A strain-gradient enhanced damage model for geomaterials and its application to stability analysis for geotechnical engineering*. Ph.D. thesis, Tsinghua University, Beijing, China.
- 2** Zhao J.D. (1999). *A study on the percolation of fractured rock mass subjected to hydraulic fracturing*. Master thesis, Tsinghua University, Beijing, China.

Keynote Lectures & Invited Talks

2024

- 1** Zhao J.D. (2024). High-fidelity simulations of complex particle-fluid interactions in granular media. 5th Aspheric & CFDEM Conference. Vienna, Austria, 26-27 September, 2024 (**Invited keynote**).
- 2** Zhao J.D. (2024). Computational Geomechanics: Advances and Challenges (计算岩土力学的进展及挑战). Dalian University of Technology, 9 August 2024 (Invited lecture).
- 3** Zhao J.D. (2024). Coupled THM modelling of geomaterials. The 7th International Workshop on Continuum and Non-continuum Numerical Analysis Method and Engineering Applications. Dalian, China, 9-12 August 2024 (**Invited Keynote**).

- 4 Zhao J.D. (2024). Multi-physics, multiscale computational granular mechanics. School of Engineering, Peking University, Beijing, China, 24 July 2024 (Invited lecture).
- 5 Zhao J.D. (2024). High-fidelity modeling of debris flow and its impact on flexible barrier. *14th International Symposium on Landslides*. Chambéry, France, 8-12 July 2024 (**Plenary Keynote**).
- 6 Zhao J.D. (2024). Peridynamic modeling of multi-physics problems in rock mechanics. *SANDLESS Conference*, Sydney, Australia, 1-4 July 2024. (Invited talk)
- 7 Zhao J.D. (2024). Computational modeling of granular media: recent progresses and challenges. University of New South Wales, 28 June 2024 (**Invited seminar**).
- 8 Zhao J.D. (2024). Multiphysics Peridynamics for Rock Mechanics. *8th National Conference on Rock Mechanics in Hydraulic Engineering (第八届全国水工岩石力学大会)*. Nanjing, China, 16-18 May 2024. (**Invited Keynote**).
- 9 Zhao J.D. (2024). Computational Modeling of Multiphysics Problems in Granular Media. *Granular Matter Webinar*. 26 April 2024. (**Invited Webinar** by Springer Nature journal Granular Matter).
- 10 Zhao J.D. (2024). Numerical modeling of debris flow hazard and its mitigation. *2024 National Conference of Technical Committee on Landslides and Debris Flows Mitigation, China Society of Soil and Water Conservation (中国水土保持学会滑坡泥石流防治专业委员会 2024 年学术年会)*, Chengdu, Sichuan, China, 19-21 April 2024. (**Invited keynote**)
- 11 Zhao J.D. (2024). Multiscale, multiphysics modeling of granular media. School of Mechanics and Engineering Science, Hohai University, 30 Mar 2024. (**Invited seminar**)
- 12 Zhao J.D. (2024). Multiscale modeling of granular media and natural hazard mitigation. *2023 年蓉城国家级减灾平台联合学术会议暨第 16 届山地灾害实验室与地灾国重室联合学术年会*. Chengdu, Sichuan, China, 29 Mar 2024. (**Invited keynote**)
- 13 Zhao J.D. (2024). Modelling fluid-particle-structure interactions in debris flow. *IAS Symposium on Computational Geomechanics (CG2024)*. HKUST, Hong Kong, China, 3-6 Mar 2024. (**Invited keynote**)
- 14 Zhao J.D. (2024). Computational Modeling of failures in granular materials subjected to thermo-hydro-mechanical loads. *INR GeoMech & Hohai University Winter School on Failure Process of Geomaterials*, France (Online), 12-13 Feb 2024. (**Invited keynote**)
- 15 Zhao J.D. (2024). Computational modelling of grain crushing in granular media & beyond. *EME International Seminar Series*, University of Tsukuba, Japan, 24 Jan 2024. (**Invited lecture**)
- 16 Zhao J.D. (2024). Multiphase, multiphysics modelling of debris flows and countermeasures. Nagoya University, Japan, 2 Feb 2024. (**Invited lecture**)
- 17 Zhao J.D. (2024). Challenges and implications of grain shape modelling for granular media. *Duke Kunshan University Soft Matter Symposium 2024*. Duke Kunshan University, Shanghai, China, 26-28 Jan 2024. (**Invited keynote**)
- 18 Zhao J.D. (2024). Current and future challenges for computational geomechanics. *TC103 Seminar at Kyoto*, hosted by TC103 Supporting Committee of JGS, Kyoto University, 22 Jan 2024. (**Invited lecture**)

- 19 Zhao J.D. (2024). MPM for multiphysics and multiscale geotechnical problems, Kyoto University, 9 Jan 2024. **(Invited lecture)**

2023

- 20 Zhao J.D. (2023). Multiscale, multiphysics modelling of granular media. TCI05 “Geo-Mechanics from Micro to Macro” Seminar, hosted by TCI05 Supporting Committee of JGS, Tokyo, 15 Dec 2023. **(Invited lecture)**
- 21 Zhao J.D. (2023). Computational modelling of large deformation in geomechanics (岩土工程大变形问题数值模拟). “科创中国大湾区青年百人会青年科学家论坛暨 2023 年度粤港澳大湾区岩土工程青年学者论坛”, Guangzhou, China, 9 Dec 2023. **(Invited keynote)**
- 22 Zhao J.D., Zhao S.W. (2023). Advances and Challenges to computational granular mechanics and general-purpose software development. Internet Based Engineering Co. Ltd. (云道智造). Beijing, China, 15 Nov 2023. **(Invited lecture)**
- 23 Zhao J.D. (2023). Computational Granular Mechanics: Progresses and Challenges. 14th National Conference on Soil Mechanics and Geotechnical Engineering (第十四届全国土力学及岩土工程学术大会). Wuhan, China, 27-30 Oct 2023. **(Invited keynote)**
- 24 Zhao J.D. (2023). Multiscale, multiphysics modelling of large deformation in geomechanics. Ninth National Summit on Constitutive Theories of Soils (第九届岩土本构理论高层论坛). Shenzhen, China, 26 Oct 2023. **(Invited keynote)**
- 25 Zhao J.D. (2023). Computational Granular Mechanics: Challenges and Opportunities for Industrial Software on Granular Materials. Forum on Basic Science and Common Technologies of Industrial Software (工业软件基础科学及共性技术研讨会). Organised by NSFC and Hebei University of Technology. Shijiazhuang, Hebei, China, 17-20 Oct 2023 (Invited lecture)
- 26 Zhao J.D. (2023). Challenges to multiscale, multiphysics modelling of granular media. Frontier Forum on Computational Mechanics of Granular Materials. Taiyuan, China, 19-23 July 2023 (Invited lecture).
- 27 Zhao J.D. (2023). Challenges and Opportunities for Computational Granular Mechanics. Wuhan University, China, 18 July 2023 (invited lecture).
- 28 Zhao J.D. (2023). Pathways of granular mechanics: from continuum, discrete to multiscale approaches. Huazhong University of Science and Technology, China, 7 July 2023 (invited lecture).
- 29 Zhao J.D. (2023). Modeling anisotropy of geomaterials: from constitutive modelling, micromechanics, to multiscale modelling. 2023 Workshop on “Fundamental Theories for Resilience of Deep Underground Space of Mega Cities”(超大城市深层地下空间韧性基础理论”研讨会), Tsinghua University, 2 July 2023 (Invited online lecture).
- 30 Zhao J.D. (2023). The present and future of computational granular mechanics. Department of Civil and Environmental Engineering, Imperial College London. 27 June 2023 (Invited lecture).

- 31 Zhao J.D., Yu T., Lai Z.S., Zhao S.W. (2023). Resolved/unresolved coupled CFD-DEM for simulation of particle-fluid-structure interaction problems. X International Conference of Computational Methods for Coupled Problems in Science and Engineering, Chania, Crete, Greece, 5-7 June 2023. **(Invited theme lecture)**
- 32 Zhao J.D., Liang W.J., Soga K. (2023). Multiscale modeling of large deformation in saturated granular media. MPM Spring Workshop 2023. Aix-En-Provence. 2 June 2023. (Invited lecture)
- 33 Zhao J.D. (2023). Computational modelling of multiphase fluids interacting with irregularly-shaped granular particles. International Symposium on Numerical Analysis of Geomaterials. Assisi, Italy, 10-12 May 2023. **(Invited theme lecture)**
- 34 Zhao J.D. (2023). Challenges in computational multiscale modeling of granular media. 6th National Symposium on Continuum-Discontinuum Numerical Methods. Jinan, Shandong, 15-16 April 2023. **(Invited keynote)**
- 35 Zhao J.D. (2023). Coupled CFD-DEM approaches for geomechanics problems. 14th National Conference on Numerical and Analytical Methods in Geomechanics, Wuhan, China, 7-9 April 2023 **(Invited keynote)**
- 36 Zhao J.D. (2023). Challenges of climate change and energy crisis to computational geomechanics. Beijing Jiaotong University, 5 April 2023 (Invited lecture)
- 37 Zhao J.D. (2023). Computational modeling of the multiscale and multiphysics nature of granular materials. Institute of Mechanics, Chinese Academy of Science, 5 April 2023 (Invited lecture)
- 38 Zhao J.D. (2023). Multiphase, multiscale modeling of debris flow and its mitigation. Dept of Hydraulic and Hydropower Engineering, Tsinghua University, 4 April 2023 (Invited lecture)
- 2022**
- 39 Zhao J.D. (2022). Multiscale modeling of the dynamic hydromechanical coupling behaviour in saturated granular media. 17th Symposium of Earthquake Engineering (17SEE), IIT Roorkee, India, 14-17 Nov 2022 **(Invited keynote lecture)**
- 40 Zhao J.D. (2022). Multiscale mechanics of granular media. Beijing Jiaotong University “Frontier of Geotechnical Engineering Open Lecture” (3-hour Online Lecture), Beijing, 13 Nov 2022. **(Special invited lecture)**
- 41 Zhao J.D. (2022). Computational multiscale modelling of granular media for integrated civil engineering analysis and design. 3rd International Conference on Civil Engineering: Fundamentals and Applications (ICCEFA’22, online conference). 24-26 Oct 2022 . **(Invited keynote lecture)**
- 42 Zhao J.D. (2022). Computational multiscale granular mechanics: progresses and challenges. Hohai University International Invited Lecture Series on “Dike and Dam Safety and Hazard Mitigation (河海大学堤坝工程安全与减灾学科创新引智基地系列报告会). 22 July 2022. **(Special invited lecture)**
- 43 Zhao J.D., Liang W.J., Zhao S.W., Soga K. (2022). Multiscale insights into dynamic behavior of saturated granular sand at large deformation. 4th International Conference on Performance-based Design in Earthquake Geotechnical Engineering. Beijing, China, 15-17 July 2022. **(Invited theme lecture)**

- 44 Zhao J.D., Zhao S.W. (2022). Multiscale modelling of thermos-mechanical coupling problems in granular media. International Symposium of Intelligent Geotechnics (online). Hong Kong, 10-11 June 2022. (**Invited keynote lecture**)
- 45 Zhao J.D. (2022). Multiscale, multiphysics modelling of granular materials. The 25th Annual Conference of HKSTAM 2022 in conjunction with the 17th Jiangsu-Hong Kong Forum on Mechanics and Its Application, Hong Kong, 23 April 2022. (**Distinguished keynote lecture**)
- 46 Zhao J.D. (2022). Multiscale, modelling of debris flows and their mitigation. Tianjin University (天津大学地震工程综合模拟创新基地智汇讲坛云讲座), 25 April 2022. (**Special invited lecture**)
- 47 Zhao J.D. (2022). **State of the Art Lecture** on "Micro Mechanics and Advances in DEM". Geo-Congress 2022, Charlotte, North Carolina, USA, 20-23 Mar 2022. (**Special keynote lecture invited once every 10 years**)

2021

- 48 Zhao J.D. (2021). Multiscale modelling of transition of deformation bands in high-porosity sandstone. 2021 Annual Workshop on "Marine Geology and Carbon Sequestration". Key Laboratory of Zhejiang Province on Marine Geology and Resources, Hangzhou, China 25 Dec 2021. (Invited lecture)
- 49 Zhao J.D. (2021). Numerical modeling of intertwined evolution of grain size and shape in crushable granular media. International Workshop on Computational Mechanics of Granular Materials. Dalian, China, 23 Dec 2021 (online). (**Keynote lecture**)
- 50 Zhao J.D. (2021). Continuum-discrete coupling for multiscale modeling of granular media. The 3rd International Symposium on Computational Particle Technology. 17-21 November 2021, Suzhou (China) and Melbourne (Australia) (**Keynote lecture**).
- 51 Zhao J.D., Zhu F. (2021). Peridynamic simulation of continuous grain crushing in granular media. International Workshop of Smart Infrastructure Development towards Smart City. 20 Nov 2021, Shantou & Hong Kong (online) (invited talk).
- 52 Zhao J.D. (2021). Paradigm shift in computational modeling of granular media for geomechanics. 2021 Westlake International Symposium in Engineering (WISE 2021), Westlake University, Hangzhou, China, 26-27 Oct 2021 (**Keynote lecture**).
- 53 Zhao J.D. (2021). Multiscale modeling of granular media: from geomechanics to 3D printing. VII International Conference on Particle-Based Methods. Fundamentals and Application (PARTICLES 2021), Hamburg, Germany, 4-6 Oct 2021 (**Plenary keynote**).
- 54 Zhao J.D. (2021). Multiscale modeling of soil-structure interaction in geomechanics. 9th Machine-Ground Interaction Consortium (MaGIC) Meeting, Grainger Institute for Engineering, University of Wisconsin-Madison, USA, 21-23 September 2021. (Invited talk)
- 55 Zhao J.D., Liang W.J., Zhao S.W. (2021). Multiscale modeling of large deformation in geomechanics. 2nd International Workshop on Numerical Simulation Methods for Large Deformation Problems in Geotechnical Engineering. Shanghai, China, 18-19 Sept 2021. (**Keynote lecture**)
- 56 Zhao J.D. (2021). Computational multiscale modeling for geotechnical engineering: future and challenges. 9th Invited 'Water Science Lecture' of State Key Laboratory of Water Resources and Hydropower Engineering Science (Wuhan University). 28 August 2021. (Invited online lecture)

- 57 Zhao J.D. (2021). Multiscale modeling of granular media for geomechanics and beyond. Powders and Grains 2021 (P&G 2021). Buenos Aires, Argentina, 5–9 July 2021. (**Plenary keynote lecture**)
- 58 Zhao J.D. (2021). Challenges in computational multiscale modeling of granular media. International Research Network (IRN) GeoMech Online Symposium on "Micromechanics of granular materials: relationships between microstructure and macroscopic behavior, from experiments to modeling", University of Twente, Netherlands, 18-19 January 2021. (**Online keynote lecture**)

2020

- 59 Wu H.R., Zhao J.D. (2020). Complete Spectrum of Deformation Band: A Multiscale Perspective. China Rock 2020, Beijing, China, 25–26 Oct 2020. (Invited online lecture)
- 60 Zhao J.D. (2020). Multiscale modeling of Granular Media. University of Liverpool Invited Webinar, 14 July 2020. (Invited online lecture)
- 61 Zhao J.D. (2020). Messengers for granular media to cross scales. *IAS Workshop on Emerging Scales in Granular Media*. Hong Kong, 14–16 January 2020. (**Keynote lecture**)

2019

- 62 Zhao J.D. (2019). Multiscale Modeling of Granular Media: Trends and Challenges. Institute of Applied Physics and Materials Engineering (IAPME), University of Macau, 30 December 2019. (Invited seminar)
- 63 Zhao J.D. (2019). Multiscale Modeling of Large Deformation in Coastal/offshore Geomechanics. Geotechnical Engineering Office (GEO), CEDD, Hong Kong, 20 November 2019. (Invited seminar)
- 64 Zhao J.D. (2019). Peridynamics for multiscale modeling of continuous grain crushing. Inauguration and Forum for International Research Center of Peridynamics and Nonlocal Theory. Nanjing, China, 1–3 Nov 2019. (**Keynote lecture**)
- 65 Zhao J.D. (2019). Multiscale modeling of large deformation in offshore geotechnics. 13th China National Conference of Numerical and Analytical Methods in Geomechanics. Beijing China, 20-22 September 2019. (**Semi-plenary keynote**)
- 66 Zhao J.D. (2019). Computational Multiscale Modeling of Large Deformation in Geomechanics by Coupled MPM/DEM. International Symposium on SPH and other particle-based continuum methods and their applications in geomechanics. Vienna, Austria, 11–13 September 2019. (Invited lecture)
- 67 Zhao J.D. (2019). A hybrid method on modeling of grain crushing. The 10th International Conference on Computational Methods (ICCM2019). Singapore, 9-13 July 2019. (**Invited keynote lecture**)
- 68 Zhao J.D. (2019). Multiscale Modeling of Granular Media. International Symposium on Cutting-edge Technological Progress on Concrete Materials, Shenzhen, China, 2-3 July 2019. (**Invited keynote lecture**)
- 69 Zhao J.D. (2019). Multiscale Modeling Large Deformation in Offshore Geotechnics. Shenzhen University, Shenzhen, 2 July 2019. (Invited lecture)

- 70 Zhao J.D. (2019). Multiscale Modeling Large Deformation in Offshore Geotechnics. Geotechnical Seminar Series(岩土论道), Research Center of Coastal and Urban Geotechnical Engineering, Zhejiang University, Hangzhou, China, 21 June 2019. (Invited lecture)
- 71 Zhao J.D. (2019). Multiscale Modeling Large Deformation in Offshore Geotechnics. Beijing Jiaotong University, Beijing, China, 20 June 2019. (Invited lecture)
- 72 Zhao J.D. (2019). Multiscale modeling of particle crushing in granular media. 8th International Conference on Discrete Element Method (DEM8), Enschede, Netherlands, 21-26 July 2019 (**Plenary keynote lecture**)
- 73 Zhao J.D. (2019). Signature of fabric anisotropy in sheared granular media Chinesisch-Deutschen Zentrum für Wissenschaftsförderungworkshop on “Granular phase transitions: from fundamentals to applications”, Kloster Banz, Germany, 14-17 April 2019 (**Keynote lecture**)
- 74 Zhao J.D. (2019) Computational Multiscale modeling of granular media. 2019 Lorentz Center Workshop on “Granular Matter Across Scales”, Lorentz Center, Leiden, Netherlands, 18-22 March 2019 (**Keynote lecture**)

2018

- 75 Zhao J.D., Hierarchical multiscale modeling of granular media: the good, the bad and the ugly. Second Yet Another Discrete Element Workshop. Aix-Provence, France, 26-27 April 2018 (**Plenary keynote lecture**)
- 76 Zhao J.D., Multiscale modeling of granular media. 2018 Lecture Series by Outstanding Experts in Civil Engineering and 9th National Graduate Student Summer School, co-organized by Southeast University and Chinese Society of Civil Engineering. Nanjing, China, 1-y July 2018 (**Invited keynote lecture**)
- 77 Zhao J.D., Computational modeling of multi-phase, multi-physics interactions in debris flows. Zhejiang University, Hangzhou, China, 12-13 May 2018 (Invited lecture)
- 78 Zhao J.D., Multi-scale, multi-phase modeling of debris flow and interactions with flexible barrier. The 1st International Symposium on Debris Flow Mechanisms and Mitigation for Sustainable Development, Hong Kong, 2 Dec 2018 (**Keynote lecture**)
- 79 Zhao J.D., Crushing criterion of granular particles under multiple contacts. Fourth National Conference of Computational Mechanics of Granular Materials (CMGM-2018), Xiamen, China, 7-8 June 2018 (**Keynote lecture**)

2017

- 80 Zhao J.D., Multiscale Modeling of Strain Localization in Sand. 11th International Workshop on Bifurcation and Degradation in Geomaterials (IWBDG 2017). Limassol, Cyprus, 21-25 May 2017 (**Keynote lecture**)
- 81 Zhao J.D., Computational Multiscale Modeling of Granular Media. 15th International Conference of the International Association for Computer Methods and Advances in Geomechanics (IACMAG 2017). Wuhan, China, 19-23 Oct 2017 (**Semi-plenary keynote lecture**)
- 82 Zhao J.D., Li X.Y., Mitigating debris flow impacts by flexible barriers, a unified predictive framework based on coupled CFD-DEM approach. Second Bilateral French-Italian

Workshop Open issues and emerging approaches in geo-environmental mechanics, Arpino, Italy, 2-4 May 2017 (Invited lecture)

- 83 Zhao J.D., Multiscale, multiphysics modeling of granular media. Workshop on Strategic Research Areas in Geotechnical and Transportation Engineering, Hong Kong, 12 Aug 2017 (Invited lecture)

2016

- 84 Zhao J.D., Multiscale Modeling of Granular Materials. Third National Conference on Computational Mechanics of Granular Materials (CMGM-2016). Dalian, China, 30 July–1 Aug 2016 (Invited keynote lecture)
- 85 Zhao J.D., Multiscale and multiphysics modeling in geomechanics. 4 July 2016, Tsinghua University; 7 July, Beihang University, Beijing; 10 July 2016, Tongji University, 12 July 2016, Shanghai Jiao Tong University, Shanghai, China (**Lecture Tour** under sponsorship by K.C. Wong Education Foundation)
- 86 Zhao J.D., Multiscale Modeling of Granular Matter: Theory and Applications. IAS Focused Program on Computational and Mathematical Problems in Materials Science. Institute for Advanced Study, HKUST, 25-29 January 2016 (Invited lecture)
- 87 Zhao J.D., Alternative pathway to granular plasticity via computational multiscale modeling. Plasticity 2016. Sheraton Kona Resort & Spa at Keauhou Bay, Big Island, Hawaii, USA, 3-9 Jan 2016. (**Keynote lecture**)

2015

- 88 Zhao J.D., Multiscale Modeling of Granular Matter. Seminar on Scientific Computing, School of Science, Hong Kong University of Science and Technology. 15 April 2015 (Invited lecture).
- 89 Zhao J.D. Computational Multiscale Modeling: A paradigm shift for Geotechnical Analysis and Design. Wuhan University, Wuhan, China. 10 April 2015 (Invited lecture).
- 90 Zhao J.D. Computational multiscale modeling for Geotechnical Engineering. Huazhong University of Science and Technology, Wuhan, China. 9 April 2015 (Invited lecture).
- 91 Zhao J.D. A novel multiscale modeling solution for geotechnical engineering. Chang'an University, Xi'an, China. 8 Apr 2015 (Invited lecture).

2013

- 92 Zhao J.D., Coupled CFD-DEM modeling of debris flow. Geotechnical Engineering Office, Civil Engineering and Development Department, Hong Kong SAR, China. 18 Nov 2013 (Invited lecture).
- 93 Zhao J.D., Mollon G. A Statistical Approach on Reproducing Real Particle Shapes for Discrete Modelling of Granular Sand. The University of Newcastle, Australia. 5 July 2013 (Invited lecture).
- 94 Zhao J.D. Coupled CFD-DEM modeling of particle-fluid interactions in granular media. The University of Queensland, Australia. 3 July 2013 (Invited lecture).
- 95 Zhao J.D. Discrete modeling of particle-fluid interactions in granular media. HKUST-SJTU Joint Workshop in Applied Math and Scientific Computing. 12-13 Apr 2013, HKUST, Hong Kong (Invited lecture).

2012

- 96 Zhao J.D., Shan T. Discrete modeling of fluid-particle interactions in granular media and relevant geomechanics problems. 2012 National Conference on Computational Mechanics of Granular Materials (CMGM-2012). Hunan, China, 16-18 Sept 2012 (**Keynote lecture**).

2011

- 97 Zhao J.D. Advanced characterization of complex soil behavior. Sino-tech Forum, Taipei, Taiwan, 12 Dec. 2011 (Invited lecture).
- 98 Zhao J.D. The role of fabric anisotropy in the behavior of granular media under confined shear. Department of Mechanical Engineering, Hong Kong University of Science and Technology, Hong Kong, 18 Nov 2011 (Invited lecture).
- 99 Zhao J.D. A general anisotropic failure criterion and its application to constitutive modeling of structured sand. Tongji University, Shanghai, China, 28 June 2011 (Invited lecture).
- 100 Zhao J.D., Guo N. Evolution of shear-induced anisotropy in granular materials. The 7th National Youth Conference on Geotechnical Engineering. Beijing, China, 15-18 April 2011 (**Keynote lecture**).

2010

- 101 Zhao J.D. The bimodal behavior of strength anisotropy in granular materials. The 4th Japan-China Geotechnical Symposium. Okinawa, Japan, 12-14 April 2010.

2009

- 102 Zhao J.D. Shakedown of cohesive-frictional soils under moving surface loads. 6th Shanghai-Hong Kong Forum on Mechanics and Its Application, Shanghai, China, 4 July 2009.
- 103 Zhao J.D. Shear banding localization in geomaterials. Department of Civil Engineering, Shanghai University, Shanghai, China, 9 July 2009 (Invited lecture).

TEACHING AND SUPERVISION

Teaching

2018-Present	CIEM 5740 Computer Methods for Slope Engineering, MSc program, HKUST
2012-Present	CIVL 4750 Numerical Solutions to Geotechnical Engineering, UG, HKUST
2015-2017	CIEM 5730 (or 6000F) Fundamentals of Geomechanics, MSc program, HKUST
2012	CIVL 1100 Discovering Civil and Environmental Engineering, UG first year, HKUST
2012	CIVL 1110 History and Practice of Engineering, UG first year, HKUST
2008-10, 14-15	CIVL 4720 Geotechnical Analysis and Design, UG required core course, HKUST
2008-Present	CIVL 5730 Theoretical and Computational Soil Mechanics, PG, HKUST
2008-Present	CIVL 4710 Soil Slope Engineering, UG final year elective, HKUST
2007	GENG 1002 Introduction to Engineering Computations, UG, Uni. of Newcastle

Research Supervision (as sole supervisor, * HKPF: Hong Kong PhD Fellowship)

Ph.D.

2023-Present	Zhang Cheng	Thesis topic: multiscale, multiphysics modeling of soils
2023-Present	Wentao Wang	Thesis topic: Data-driven CFD-DEM coupling
2022-Present	Changyi Yang	Thesis topic: Peridynamics (HKPF*)
2021-Present	Renee Vizmanos	Thesis topic: Coastal geotechnics under storm surges (HKPF)
2021-Present	Jidu Yu	Thesis topic: THM coupling of methane hydrate bearing soil
2020-2024	Quan Ku	Thesis: Multiphysics Computational Modeling of the Compactive Behavior of Cohesive Powders and Soft Granular Matter
2018-2023	Ke SHI	Thesis: Multiscale modeling of crushable granular media (HKPF)
2019-2023	Tao Yu	Thesis: Multiscale modeling of powder-based laser additive manufacturing (HKPF)
2016-2022	Amiya Prakash Das	Thesis: Micromechanical modeling of tri-phasic granular system
2016-2020	Weijian Liang	Thesis: Multiscale modeling of large deformation in granular media (Now RAP at Hong Kong Polytechnic University)
2016-2020	Yong Kong	Thesis: Computational modeling and analysis of multiphase geophysical flows interacting with resisting structures (Now RAP at Hong Kong Polytechnic University)

2015-2019	Fan Zhu	Thesis: Multiscale Modeling of Grain Crushing in Granular Media (HKPF , now tenured Associate Professor at Kyoto University of Japan)
2014-2018	Huanran Wu	Thesis: Multiscale modeling of localized deformation in high-porosity granular rocks (Now associate professor at Chongqing University)
2014-2018	Xingyue Li	Thesis: Computational modeling of debris flows and their interaction with resisting barriers based on a coupled CFD-DEM approach (HKPF , now professor at Tongji University)
2010-2015	Tong Shan	Thesis: Discrete modeling of fluid-particle interaction in geomechanics
2009-2014	Ning Guo	Thesis: Multiscale modeling of granular media (First position held as Assistant Professor at Carleton University, Canada, and now Professor and “National Thousand Talents Program – Youth scheme” at Zhejiang University, China)
2009-2012	Zhiwei Gao	Thesis: Constitutive modeling the anisotropic behavior of geomaterials: the role of fabric (Now Senior Lecturer at University of Glasgow, UK)

M.Phil.

2020-2022	Terry Leung	Thesis topic: Multiphase fluid and particle flow
2017-2019	Zhijie Yu	Thesis topic: Machine Learning for Geomechanics
2012-2015	Zhaochen Liu	Thesis topic: Micromechanics of granular sand considering realistic particle shape
2011-2013	Jingfeng Wei	Thesis topic: An experimental study on the behavior of fiber-reinforced sand

Research Assistant Professors

2024-Present	Deyun LIU	Ph.D.: Imperial College London (UK)
2023-Present	Tongming QU	Ph.D.: The University of Swansea (UK)
2022-Present	Shiwei ZHAO	Ph.D.: South China University of Technology (China)
2021-2022	Xiusong SHI	Ph.D.: Technische Universität Dresden (Germany)

Postdoc Fellows

2024-Present	Hao Chen	Postdoc fellow (Ph.D.: South China University of Technology)
2023-2024	Xi Wang	Postdoc fellow (Ph.D.: Tongji University)
2022-2023	Tongming QU	Postdoc fellow (Now Research Assistant Professor at HKUST. Ph.D.: University of Swansea)

2021-2023	Zhengshou Lai	Hong Kong Scholar Program postdoc fellow (Now associate professor at Sun Yat-Sen University. Ph.D.: Clemson University)
2020-2021	Yiqiu Zhao	Postdoc fellow (Ph.D.: Duke University)
2020-2022	Weijian Liang	Postdoc fellow (Now Research Associate Professor at Hong Kong Polytechnic University. Ph.D.: HKUST)
2020-2021	Yong Kong	Postdoc fellow (Now Research Associate Professor at Hong Kong Polytechnic University. Ph.D.: HKUST)
2019-2022	Fan Zhu	Postdoc fellow (Now Associate Professor at Kyoto University. Ph.D.: HKUST)
2018-2020	Shiwei Zhao	Hong Kong Scholar Program postdoc fellow (Ph.D.: SCUT and Oregon State University. Now Research Assistant Professor at HKUST)
2018-2020	Xiusong Shi	Research Assistant Professor at HKUST (2019-20) (now Professor and “National Thousand Talents Program – Youth scheme” at of Hohai University, China. Ph.D.: Technische Universität Dresden)
2018-2020	Huanran Wu	Postdoc fellow (now associate professor at Chongqing University. Ph.D.: HKUST)
2018-2019	Xingyue Li	Postdoc fellow (Postdoc at EPFL and Professor at Tongji. Ph.D.: HKUST)
2018-2019	Huo Fan	Postdoc fellow (now research scientist at CAS, Ph.D.: CAS)
2014-2016	Ning Guo	Postdoc fellow (now Professor and “National Thousand Talents Program – Youth scheme” at Zhejiang University, China. Ph.D.: HKUST)
2012-2013	Hua Jiang	Postdoc fellow (now faculty at Chang’an University, China)
2012-2013	Zhiwei Gao	Postdoc fellow (Now <i>Senior Lecturer at University of Glasgow, UK</i> . Ph.D.: HKUST)
2011-2012	Yuxia Kong	Postdoc fellow (Now associate professor at Nanjing Institute of Technology. Ph.D.: BUAA)
2011-2012	Guilhem Mollon	Postdoc fellow (Now <i>Associate Professor at INSA-Lyon</i> . Ph.D.: Grenoble)
2011-2012	Fengtao Liu	Postdoc fellow (Now faculty at Guilin University of Technology)

Visiting Research Students

2024	Shuo Huang	From Peking University, China
2023	Qingzheng Guan	From Zhejiang University, China
2023	Yanzhen Zhu	From Zhejiang University of Technology, China
2022-2023	Yipeng Xie	From Central South University, China
2018-2019	Xiang Wang	From Central South University, China

2018-2019	Jiayan Nie	From Wuhan University, China
2019	Jichao Lou	From Southeast University, China
2016-2017	Ajinka Kulkarni	From IIT Madras, India
2014	Julien Molina	From Ecole Nationale Supérieure des Mines, France

UROP Students

2018	Ho Yin Leung	UROP Project: <i>Computer Visualization of sand grains</i>
2018	Tsz Yin Chow	UROP Project: <i>Modeling debris flows</i>
2018	Chung Yin Choi	UROP Project: <i>Modeling debris flows</i>
2017	Shun Wai Chau	UROP Project: <i>Computer visualization of sand grains</i>
2016	Meibai Li	UROP Project: <i>Determination of Permeability in Porous Media</i>
2013	Wai Chung Wong	UROP Project: <i>Triaxial testing on fiber-reinforced sands</i>
2009	Meng Yu	UROP Project: <i>Urban Tunneling</i>

MSc Project Students

2023-2024	10	2022-2023	5
2021-2022	5	2020-2021	8
2019-2020	10	2018-2019	10
2017-2018	5	2016-2017	1

Undergraduate Final Year Project Students

2024-2025	6	2023-2024	6
2022-2023	5	2021-2022	7
2020-2021	7	2019-2020	6
2018-2019	7	2017-2018	7
2016-2017	7	2015-2016	7
2014-2015	5	2013-2014	5
2012-2013	6	2011-2012	6
2010-2011	5	2009-2010	9

SERVICES

Editorship

- 2024- Co-Editor-In-Chief, *Computers and Geotechnics* (Elsevier)
- 2020-2023 Co-Editor, *Computers and Geotechnics* (Elsevier)
- 2022- Advisory editorial board, *Meccanica* (Springer Nature)
- 2018- Editor, *Granular Matter* (Springer Nature)
- 2019- Associate Editor, *Journal of Engineering Mechanics* (ASCE)
- 2019- Editorial board member, *Acta Geotechnica* (Springer Nature)
- 2019- Editorial board member, *International Journal for Numerical and Analytical Methods in Geomechanics* (Wiley)
- 2019- Editorial board member, *Science Progress* (SAGE)
- 2015-2017 Guest editor, *Granular Matter* (Springer Nature)
- 2012-2019 Editorial board member, *Computers and Geotechnics* (Elsevier)

Assessment Panel

- 2024- Panel member, the Science, Medicine, Engineering and Technology Selection Panel (S Panel) for assessing nominations from University Grants Committee (UGC)-funded universities of Hong Kong for Hong Kong PhD Fellowship Scheme (HKPFS), and RGC Postdoctoral Fellowship Scheme (PDFS) (University Grants Council of Hong Kong)

Professional Membership

- 2022- Member, American Society of Civil Engineers (ASCE)
- 2020- Vice Chair, Chinese Society for Theoretical & Applied Mechanics Computational Granular Mechanics Committee
- 2019- Committee member, Association pour l'Etude de la MicroMécanique des Milieux Granulaires (AEMMG)
- 2012- Member, Chinese Society for Theoretical and Applied Mechanics Computational Granular Mechanics Committee
- 2018- Core member, ISSMGE TCI05 Geomechanics from Micro to Macro
- 2009-2017 Member, ISSMGE TCI05 Geomechanics from Micro to Macro
- 2017- Core member, ISSMGE TCI03 Numerical Methods in Geomechanics
- 2009-2017 Secretary, ISSMGE TCI03 Numerical Methods in Geomechanics

2017-	Board member, International Association for Computer Methods and Advances in Geomechanics
2014-	International Association of Computational Mechanics (IACM)
2013-	Member, Engineering Mechanics Institute (EMI) Granular Material Committee
2009-	Member, International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)
2009-	Member, Hong Kong Geotechnical Society
2008	Member, Hong Kong Society of Theoretical and Applied Mechanics
2008-	Member, Chinese Society for Soil Mechanics and Geotechnical Engineering
2003-	Member, Australian Association for Computational Mechanics
2003-2008	Member, Australian Geomechanics Society

Recognitions as Reviewer

2019	Publons Peer Review Award in Cross Field (Top 1%)
2018	Publons Peer Reviewer Awards 2018 (top 1% in Geosciences)
2018	2017 Excellent Reviewers Award for Computers & Geotechnics (Elsevier)
2017	2016 Excellent Reviewers Award for Computers & Geotechnics (Elsevier)
2017	Publons Peer Review Awards 2017 (top 1% in Earth and Planetary Sciences)
2016	Publons Certified Sentinel of Science Award 2016 (top 1% in Earth and Planetary Sciences)

Grant Assessor

2024-	Deutsche Forschungsgemeinschaft (DFG)
2018-	European Research Council (ERC) - Advanced Grant (European Union)
2018-	Poland National Science Centre (Narodowe Centrum Nauki – NCN, Poland)
2014-	Natural Sciences and Engineering Research Council of Canada (NSERC, Canada)
2014-	Chilean National Science and Technology Commission (Chile)
2007-	Australian Research Council (ARC, Australia)
2006-2008	Research Grants Council of Hong Kong (RGC-HK, Hong Kong)

Book Assessor

2011	Spon Press (an imprint of Taylor & Francis)
2021	CRC Press & Routledge (imprints of Taylor & Francis)

Conference Reviewer

2022	IWBDG 2022, Perth, Australia, Dec 2022
2020-2021	Powders and Grains 2021, Argentina, July 2021
2018-2020	EMI Conference, MIT (18), Caltech (19), New York (21)
2019	16th IACMAG, Turin, Italy, July 2021
2018	Geo-Shanghai International Conference 2018, Shanghai, China, 27-30 May 2018
2017	15th IACMAG, Wuhan, China, 19-23 Oct 2017
2014	14th IACMAG, Kyoto, Japan, 22-25 Sept 2014
2014	10th IWBDG, Hong Kong, 28-30 May 2014
2013	4th International Symposium on Geotechnical Risk and Safety, Hong Kong, 4-6 Dec 2013
2013	Experimental Micromechanics for Geomaterials, Hong Kong, 23-24 May 2013
2012	Geo-Congress 2012, Oakland, CA, USA, 25-29 March 2012
2008	1st Southern Hemisphere International Rock Mechanics Symposium, Perth, Western Australia, Australia, 16–19 September 2008
2008	12th IACMAG, Goa, India, 1-6 October 2008

Editor & Reviewer Records (via Clarivate Web of Science)

Editor & Reviewer <https://www.webofscience.com/wos/author/record/464074>

Journal Reviewer for:

Acta Geotechnica, Acta Mechanica, Acta Mechanica Sinica, Additive Manufacturing, Advances in Engineering Software, AIChE Journal, Arabian Journal for Science and Engineering, Canadian Geotechnical Journal, Chemical Engineering Science, Computational Mechanics, Computational Particle Mechanics, Computers and Geotechnics, Computer Methods in Applied Mechanics and Engineering, Engineering Computations, Engineering Fracture Mechanics, Engineering Geology, Environmental Geotechnics, European Journal of Environmental and Civil Engineering, Extreme Mechanics Letters, Geochemistry, Frontiers in Materials, Geomechanics and Engineering, Geomechanics and Geoengineering, Geophysics, Geosystems (3G), Geotechnique, Geotechnique Letters, Geotextiles and Geomembranes, Granular Matter, International Journal for Numerical and Analytical Methods in Geomechanics, International Journal for Numerical Methods in Engineering, International Journal of Computational Fluid Dynamics, International Journal of Geomechanics, International Journal of Heat and Mass Transfer, International Journal of Pavement Research and Technology, International Journal of Rock Mechanics and Mining Sciences, International Journal of Solids and Structures, Journal of Computational Physics, Journal of Engineering Mechanics, Journal of Geotechnical Geoenvironmental Engineering, Journal of Hydraulic Engineering, Journal of Hydraulic Research, Journal of Mountain Science, Journal of Petroleum Science and Engineering, Journal of Rock Mechanics and Geotechnical Engineering, Journal of the Mechanics and Physics of Solids, Landslides, Journal of Zhejiang University Science A, Marine Georesources and Geotechnology, Mechanics of Materials, ,

*Open Journal of Modelling and Simulation, PLOS One, Powder technology, **Proceedings of the National Academy of Sciences (PNAS)**, Proceedings of the Royal Society A Mathematical, Physical and Engineering Sciences, Molecules, Rock Mechanics and Rock Engineering, **Science**, Science China Technological Sciences, Scientific Reports, Soils and Foundations, SPE Journal, Transportation Geotechnics, Tunnelling and Underground Space Technology, Water Science and Engineering.*

Editor/Associate Editor for:

Computers and Geotechnics (Co-Editor-in-Chief)

Granular Matter (Section Editor)

Journal of Engineering Mechanics (Associate Editor)

Conference/Mini-Symposium Organizing

- 2025 International Scientific Committee, Powders and Grains 2025. India, Dec 2025.
- 2025 IX International Conference on Particle-Based Methods. Fundamentals and Applications (PARTICLES 2025), Barcelona, Spain, 20-22 October 2025 (Scientific Committee and Session Organiser)
- 2025 International Scientific Committee, The 10th International Conference on Discrete Element Method (DEM10), Himeji, Japan, 1-5 July 2025
- 2024 International Scientific Committee, IS-Grenoble 2024. Grenoble, France, 23-27 September 2024.
- 2024 The 26th International Congress of Theoretical and Applied Mechanics (ICTAM 2024), Daegu, Korea, 25-30 August 2024 (Session Chair)
- 2024 ASCE Engineering Mechanics Institute 2024 International Conference, Vienna, Austria, 11-13 September 2024 (Scientific Committee and Session Organiser)
- 2024 16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics (Minisymposium main organiser)
- 2024 **Conference Chairman**, IAS Symposium on Computational Geomechanics, HKUST, Hong Kong, 3-6 Mar 2024
- 2023 International Scientific Committee, 9th International Conference on Discrete Element Method (DEM9). Erlangen, Germany, 17-21 September 2023.
- 2023 Scientific Committee, Numerical Analysis of Geomaterials (Symposium dedicated to the memory of Prof. G.N. Pande). Assisi, Italy, 10-12 May 2023
- 2023 Invited Session Organiser, X International Conference of Computational Methods for Coupled Problems in Science and Engineering (COUPLED 2023). Chania, Crete, Greece, 5-7 June 2023
- 2022 International Scientific Committee, 12th International Workshop on Bifurcation and Degradation in Geomaterials (IWBDG 2020). Perth, Australia, 28 Nov-1 Dec 2022
- 2022 International Scientific Committee, International Symposium of Intelligent Geotechnics (online). Hong Kong, 10-11 June 2022
- 2020 **Conference Chairman**, IAS International Workshop on Emerging Scales in Granular Media, HKUST, Hong Kong, 14-16 Jan 2020

- 2019 International Scientific Committee, Session organizer and chair: The 8th International Conference on Discrete Element Methods (DEM 8), Twente, Enschede, Netherland, 21-26 July 2019
- 2018 International Advisory Committee, IS-Atlanta 2018 Geo-Mechanics from Micro to Macro in Research and Practice, ISSMGE TC105 International Symposium, Georgia Institute of Technology, Atlanta, Georgia, USA, Sept 9-12, 2018
- 2018 Organizing Committee, UNSAT2018, 7th International Conference on Unsaturated Soils, Hong Kong, 3-5 August 2018
- 2018 First China – Europe Conference on Geotechnical Engineering, Vienna, Austria, Aug 13–16, 2018 (Technical Committee, Mini-symposium organizer and Session Chair for ISSMGE TC103 Special Session on Numerical Methods)
- 2018 EMI 2018, MIT, Boston, USA, May 29–June 1, 2018 (Mini-symposium organizer for MS40 – Mechanics and Physics of Granular Materials)
- 2018 9th International Conference on Computational Methods, Rome, Italy, Aug 6–10, 2018 (Mini-symposium organizer on Multiscale/mesoscale modeling of granular materials based on discrete or coupled-continuum methods)
- 2017 Scientific Committee, The 3rd Chinese National Conference on Constitutive Models of Geomaterials, Beijing, China, Sept 1-3, 2017
- 2017 19th International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE 2017), Seoul, Korea, 17-21 September 2017 (TC103 Special Workshop Organiser)
- 2016 The 3rd International Symposium on Multi-scale Geomechanics and Geo-engineering (MSGG-Tongji 2016), Shanghai, China, November 9-12, 2016 (International Scientific Committee)
- 2016 7th International Conference on Discrete Element Methods (DEM 7), Dalian, China, August 1-4, 2016, International Advisory Committee
- 2015 EMI 2015 Stanford: Engineering Mechanics Institute Conference 2015, Stanford University, CA, USA, 16-19 June 2015, Mini-symposium Organiser and Session Chair
- 2015 EMI 2015 International: Engineering Mechanics Institute International Conference, Hong Kong, 7-9 January 2015, Conference International Scientific Committee and Session Chair
- 2014 Conference Co-Chairman, The 10th International Workshop on Bifurcation and Degradation in Geomaterials (IWBDG 2014), Hong Kong, 28-30 May 2014,
- 2014 The 2nd International Symposium on Geomechanics from Micro to Macro (IS-Cambridge), Cambridge, UK, 1-3 Sept 2014, International Advisory Committee
- 2013 Powders and Grains 2013, Sydney, Australia, 8-12 July 2013, Oral Session Chair
- 2013 2013 Experimental Micromechanics for Geomaterials – Joint workshop of the ISSMGE TC101-TC105, Hong Kong, 23-24 May 2013, Technical committee
- 2012 2012 National Conference on Computational Mechanics of Granular Materials, Hunan, China, 16-18 Sept 2012, Session chair, Conference Technical Committee
- 2011 9th International Workshop on Bifurcation and Degradation in Geomaterials (IWBDG 2011) Porquerolles Island, Provence, France, 23-26 May 2011, Session chair
- 2011 7th National Youth Conference on Geotechnical Engineering. Beijing, China, 15-18 April 2011, Plenary session chair, technical committee

2009- 13th-24th Annual Conference of Hong Kong Society of Theoretical and Applied Mechanics (HKSTAM), Session chair, organizing committee

Thesis Examination Committee

Ph.D. Thesis Committee (70)

2024 (*)	Yutang CHEN	(CIVL/HKU)
	Quan KU	(CIVL/HKUST)
	Kai Qi YAN	(CBE/HKUST)
	Yuntian ZHAO	(CIVL/HKUST)
	Samuel LAU	(CIVL/HKUST)
	Yu Ho LO	(CSE/HKUST)
	Haitao HU	(PHYS/HKUST)
	Xin HE	(CIVL/HKUST)
	Ruochen JIANG	(CIVL/HKUST)
	Yixiang WANG	(MAE/HKUST)
	Rongrong GAO	(CSE/HKUST)
2023 (12)	Lars BLATNY	(CIVL/EPFL)
	Xiaojie TANG	(CIVL/HKU)
	Tao YU	(CIVL/HKUST)
	Ke SHI	(CIVL/HKUST)
	Zheyue Fang	(MATH/HKUST)
	Liyang Guan	(PHYS/HKUST)
	Hon Piu LAM	(ECD/HKUST)
	Songtao REN	(CIVL/Westlake University)
	Zhenhao LI	(CIVL/HKUST)
	Jianbin LIU	(CIVL/HKUST)
	Karim KOOTAHI	(CIVL/HKUST)
	Ping Siang TAN	(CIVL/HKUST)
2022 (7)	Sounik Kumar Banerjee	(CIVL/UBC)
	Xin CUI	(EarthSci/HKU)
	Amiya Prakash Das	(CIVL/HKUST)
	Zheng Zhou	(CIVL/HKUST)

	Huangshi Tian	(CSE/HKUST)
	Zhichao Shen	(CIVL/HKUST)
	Soheil MOHAJERANI	(CIVL/HKUST)
2021 (6)	Jing Sun	(MAE/HKUST)
	Yixiang Wang	(CIVL/HKUST)
	Quoc Thien Phan	(CIVL/ Monash)
	Xin Mao	(CIVL/HKUST)
	Zhaoyu Su	(CIVL/HKUST)
	Kewei Feng	(CIVL/HKUST)
2020 (12)	Yahui Zhang	(EarthSci/ HKU)
	Deheng Wei	(CIVL/ Sydney)
	Linhai Huang	(PHYS/HKUST)
	Hongyu Luo	(CIVL/HKUST)
	Ran Tao	(MAE/HKUST)
	Haojie Wang	(CIVL/HKUST)
	Weijian Liang	(CIVL/HKUST)
	Yong Kong	(CIVL/HKUST)
	Md Delowar Hossain	(CBE/HKUST)
	Shengyang Zhou	(CIVL/HKUST)
	Yiyi Huang	(MATH/HKUST)
	Xin Liu	(CIVL/ CityU)
	Mengmeng Wu	(CIVL/ CityU)
2019 (6)	Fedi Zouari	(PHYS/HKUST)
	Jun Kang Chow	(CIVL/HKUST)
	Fan Zhu	(CIVL/HKUST)
	Salman TARIQ	(CIVL/HKUST)
	Jingwen Guo	(MAE/HKUST)
	Ping Shen	(CIVL/HKUST)
2018 (7)	Jannatul Azmir	(CHE/ Monash)
	Yujie Zhang	(MAE/HKUST)
	Xingyue Li	(CIVL/HKUST)
	Huanran Wu	(CIVL/HKUST)

	Chunyang Du	(CIVL/HKUST)
	Jiaqi Wang	(MAE/HKUST)
	Yueyang Zou	(PHYS/HKUST)
2017 (17)	Chongpu Zhai	(CIVL/ Sydney)
	Adnan Sufian	(CIVL/ UNSW)
	Wei Xiao	(CIVL/HKU)
	Raejee Kaewsong	(CIVL/HKUST)
	Tsz Fung Wong	(CIVL/HKUST)
	Xiaohua Nie	(MATH/HKUST)
	Tianyuan Fan	(CIVL/HKUST)
	Hongwei Liu	(CIVL/HKUST)
	Hongbo Zhao	(MATH/HKUST)
	Minghao He	(MAE/HKUST)
	Tiansheng Shi	(CIVL/HKUST)
	Xin Dai	(CHEM/HKUST)
	Zhaofeng Li	(CIVL/HKUST)
	Yuchen Fu	(CIVL/HKUST)
	Ge Chen	(CSE/HKUST)
	Chi Hung Koo	(CIVL/HKUST)
	Jiangtao Wei	(CIVL/HKUST)
2016 (7)	Wenchao Wu	(CSE/HKUST)
	Song Feng	(CIVL/HKUST)
	Weiwei Wu	(LIFE/HKUST)
	Quan Yuan	(CIVL/HKUST)
	Yani Deng	(MAE/HKUST)
	Liang Gao	(CIVL/HKUST)
	Shairfe Salahuddin	(ECE/HKUST)
2015 (5)	E Chen	(CIVL/HKUST)
	Tong Shan	(CIVL/HKUST)
	Zitao Zhang	(CIVL/HKUST)
	Jianwei Shi	(CIVL/HKUST)
	Yuanming Shi	(ECE/HKUST)

2014 (7)	Ning Guo	(CIVL/HKUST)
	Chao Zhou	(CIVL/HKUST)
	Chuanlin Hu	(CIVL/HKUST)
	Pak Hei Law	(CIVL/HKUST)
	Yongning Xie	(CIVL/HKUST)
	Dongshuai Hou	(CIVL/HKUST)
	Lina Zhang	(CIVL/HKUST)
	Xin Huang	(CIVL/ HKU)
2013 (4)	Zhen Zhang	(MATH/HKUST)
	Hongyan Ma	(CIVL/HKUST)
	Jun Zhang	(MAE/HKUST)
	Shengwen Tan	(CIVL/HKUST)
2012 (3)	Chunshun Zhang	(CIVL/ Sydney)
	Yan Gao	(CIVL/HKUST)
	Zhiwei Gao	(CIVL/HKUST)

M.Phil. Thesis Committee (13)

2021 (1)	Zhendong Xia	(CIVL/HKUST)
2019 (3)	Zhijie Yu	(CIVL/HKUST)
	Wing Hang Yiu	(CIVL/HKUST)
	Vivek BOKKISA	(CIVL/HKUST)
2016 (1)	Shuhua Wang	(CIVL/HKUST)
2015 (2)	Ruiwang Yu	(CIVL/HKUST)
	Zhaochen Liu	(CIVL/HKUST)
2014 (3)	Chun Hang Leung	(CIVL/HKUST)
	Chaoyi Wang	(CIVL/HKUST)
	Weiwei Wu	(LIFE/HKUST)
2013 (1)	Jinfeng Wei	(CIVL/HKUST)
2011 (2)	Shaopeng Fan	(CIVL/ HKU)
	Yun Man Lau	(CIVL/HKUST)
2009 (1)	Yi Liu	(CIVL/HKUST)

Administrative Service (HKUST)

HKUST	Member of Management Committee, Scientific Computing Concentration, HKUST (2015 – Present)
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Member of Search Committee for the Centre for Computational Science of HKUST(GZ), HKUST (2022 – Present)

SENG Director for MSc Civil and Infrastructure Engineering and Management (CIEM) (2017 – 2021)

School of Engineering Faculty Advisor (SFA) (2013 – Present)

CIEM MSc Program Committee (2011 – Present)

Engineering Exploration Day interview (2011 – Present)

DEPT Departmental Substantiation and Promotion Committee (2021 – Present)

Chair, Department Resource Committee (2022 – Present)

Departmental Merit Review Committee (2021 – 2022)

Coordinator for Postgraduate Studies Committee (2015 – 2021)

Executive Committee (2015 – 2017)

Undergraduate Studies Committee & Mainland Recruitment/Exchange Coordinator, 334 Subcommittee (2009 – 2015)

Search and Appointment Committee (2008 – 2015)

Postgraduate Studies Committee (2008 - 2009, 2015 – present)

Mainland JEE Cohort interview and admission

Interview panel in Beijing (2010) and Shanghai (2011)

JUPAS Engineering Exploration Day interviews (2009 – present)

Mainland-Taiwan-Macau (MTM) Open Day (2009 – 2015)