Lu Jing | Ph.D.

Northwestern University, Evanston, IL, USA
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Academic Experience

- **Northwestern University, USA**
  Department of Chemical and Biological Engineering *2018.10–present*
  Laboratory for Complex Systems and Nonlinear Dynamics in Fluids and Granular Materials
  Postdoctoral Fellow

- **University of Twente, The Netherlands**
  Department of Thermal and Fluid Engineering *2018.4–2018.6*
  Visiting Scholar (Multiscale Mechanics); Alpha Tester for MercuryDPM (2018.4–present)

- **The University of Hong Kong, Hong Kong, China**
  Department of Civil Engineering *2017.4–2018.9*
  Senior Research Assistant (Postdoctoral Fellow)

Education

- **The University of Hong Kong, Hong Kong, China** **Ph.D.**
  Department of Civil Engineering *2013.1–2017.3*

- **Tongji University, China** **M.Eng.**
  Department of Geotechnical Engineering *2010.9–2012.9*

- **Tongji University, China** **B.Eng.**
  College of Civil Engineering *2006.9–2010.6*

Research Projects

- **Flow driven segregation at the particle level**
  National Science Foundation, USA *2019.10–2022.9*
  GOALI (CBET-1929265)

- **Study on debris flow transport mechanisms based on coupled fluid-particle method**
  State Key Laboratory of Geohazard Prevention and Geoenvironment Protection, China *2018.1–2019.12*
  Open funding (SKLGP2018K024)

- **Experimental and numerical investigation of depositional mechanism of mountainside debris flows**
  State Key Laboratory of Hydraulics and Mountain River Engineering, China *2017.1–2018.12*
  Open funding (SKHL1610)

- **Coupled fluid-particle modeling for debris flows**
  Research Grants Council of Hong Kong, Hong Kong, China *2015.1–2017.12*
  General Research Fund (17203614)

Honors and Awards

- Best Paper Award for Young Researcher, IGS/IMCSRME, *2016*
- Most Accessed Article, IJNAMG, *2016*
- Excellent Graduate Student Scholarship, Tongji University, *2011*

Journal Papers

1. **Jing, L.**, Yang, G. C., Kwok, C. Y., & Sobral, Y. D. (2019) Flow regimes and dynamic similarity of immersed granular collapse: A CFD-DEM investigation. *Powder Technology*, 345, 532–543.
2. **Jing, L.**, Yang, G. C., Kwok, C. Y., & Sobral, Y. D. (2018) Dynamics and scaling laws of underwater granular collapse with varying aspect ratios. *Physical Review E*, 98, 042901.
3. **Jing, L.**, Kwok, C. Y., Leung, Y. F., Zhang, Z., & Dai, L. (2018) Runout scaling and deposit morphology of rapid mudflows. *Journal of Geophysical Research: Earth Surface*, 123(8), 2004–2023.
4. **Jing, L.**, Kwok, C. Y., & Leung, Y. F. (2017) Micromechanical origin of particle size segregation. *Physical Review Letters*, 118, 118001.
5. **Jing, L.**, Kwok, C. Y., Leung, Y. F., & Sobral, Y. D. (2016) Characterization of base roughness for granular chute flows. *Physical Review E*, 94, 052901.
6. **Jing, L.**, Kwok, C. Y., Leung, Y. F., & Sobral, Y. D. (2016) Extended CFD–DEM for free-surface flow with multi-size granules. *International Journal for Numerical and Analytical Methods in Geomechanics*, 40(1), 62–79.
7. Yang, G. C., **Jing, L.**, Kwok, C. Y., & Sobral, Y. D. (2020) Pore-scale simulation of immersed granular collapse: Implications to submarine landslides. *Journal of Geophysical Research: Earth Surface*, 125(1).
8. Weinhart, T., (...), **Jing, L.**, *et al.* (2020) Fast, flexible particle simulations - An introduction to MercuryDPM. *Computer Physics Communications*, 249, 107129.
9. Yang, G. C., **Jing, L.**, Kwok, C. Y., & Sobral, Y. D. (2019) A comprehensive parametric study of LBM-DEM for immersed granular flows. *Computers and Geotechnics*, 114, 103100.
10. Duan, K., Kwok, C. Y., Wu, W., & **Jing, L.** (2018) DEM modeling of hydraulic fracturing in permeable rock: influence of viscosity, injection rate and in-situ states. *Acta Geotechnica*, 13(5), 1187–1202.
11. Meng, Y., Zhu, H. J., Kwok, C. Y., Kuo, M., **Jing, L.**, & Huang, X. (2018) Effect of coefficient of friction on arch network in shearing process under low confinement. *Powder Technology*, 335, 1–10.
12. van der Vaart, K., Thornton, A. R., Johnson, C. G., Weinhart, T., **Jing, L.**, *et al.* (2018) Breaking size-segregation waves and mobility feedback in dense granular avalanches. *Granular Matter*, 20(3), 46.

Conference Papers

1. Yang, G. C., **Jing, L.**, Kwok, C. Y., & Sobral, Y. D. (2019) A question of scaling in immersed granular collapses. In *Second International Conference on the Material Point Method* (MPM2019). Jan 8–10, 2019, Cambridge, UK.
2. Yang, G. C., **Jing, L.**, Kwok, C. Y., & Sobral, Y. D. (2019) Simulation of pore pressure effects on granular flow dynamics. In *Second JTC1 Workshop on Triggering and Propagation of Rapid Flow-like Landslides*. Dec 3–5, 2018, Hong Kong, China.
3. **Jing, L.**, Yang, G. C., Kwok, C. Y., & Sobral, Y. D. (2018) Coupled fluid-particle modeling of submerged granular collapse. In *micro to MACRO mathematical modelling in soil mechanics*. May 29–31, 2018, Reggio Calabria, Italy.
4. Yang, G. C., **Jing, L.**, Kwok, C. Y., & Sobral, Y. D. (2018) Effects of dilation and contraction on immersed granular column collapse. In *micro to MACRO mathematical modelling in soil mechanics*. May 29–31, 2018, Reggio Calabria, Italy.
5. **Jing, L.**, Kwok, C. Y., Zhao, T. & Zhou J. (2018) Effect of particle size segregation in debris flow deposition. In *GeoShanghai International Conference 2018*. May 27–30, 2018, Shanghai, China.
6. **Jing, L.**, Kwok, C. Y., Leung, Y. F., & Sobral, Y. D. (2017). Effect of geometric base roughness on size segregation. In *EPJ Web of Conferences*: 140, 03056. Jul 3–7, 2017, Montpellier, France.
7. **Jing, L.**, Kwok, C. Y., Leung, Y. F., & Sobral, Y. D. (2017). Basal effect in mono- and bi-disperse chute flows. In *Proceedings of 7th International Conference on Discrete Element Methods* (DEM7): 445–453. Aug 1–4, 2016, Dalian, China.

8. **Jing, L.**, Kwok, C. Y., Leung, Y. F., & Sobral, Y. D. (2015). Discrete element modelling of grain size segregation in bi-disperse granular flows down chute. In *PARTICLE-BASED METHODS IV Fundamentals and Applications*. Sep 27–30, 2015, Barcelona, Spain.
9. **Jing, L.**, Kwok, C. Y., & Leung, Y. F. (2014). A coupled CFD-DEM model for fluid-particle flows with free surface: Formulation and validation. In *Geomechanics from micro to macro* (IS-Cambridge 2014): 485–490. Sep 1–4, 2014, Cambridge, UK.

Oral Presentations

1. Predicting size and density segregation in granular flows. *Blending & Segregation Forum* (BSF2019), Aug 5–8, 2019, West Lafayette, USA.
2. Driving forces in size and density segregation. *2019 APS March Meeting*, Mar 4–8, 2019, Boston, USA.
3. Feedback effect of base roughness on particle size segregation in bi-disperse granular avalanche. *2017 AGU Fall Meeting*, Dec 11–15, 2017, New Orleans, USA.
4. Characterization of geometric base roughness in mono- and bi-disperse chute flows. *Powders & Grains 2017*, Jul 3–7, 2017, Montpellier, France.
5. Experimental and numerical study of depositional mechanism of mudflows. *International Geotechnics Symposium cum International Meeting of CSRME 14th Biennial National Congress* (IGS/IMCSRME), Dec 14–17, 2016, Hong Kong, China.
6. Basal effect in mono- and bi-disperse chute flows. *7th International Conference on Discrete Element Methods* (DEM7), Aug 1–4, 2016, Dalian, China.
7. Characterization of base roughness. *Engineering Mechanics Institute Conference 2016* (EMI2016), May 23–25, 2016, Nashville, USA.
8. Grain size segregation in chute flows. *IV International Conference on Particle-Based Methods* (PARTICLES 2015), Sep 27–30, 2015, Barcelona, Spain.
9. Extended CFD-DEM for fluid-particle flows with free surface. *International Symposium on Geomechanics from micro to macro* (IS-Cambridge 2014), Sep 1–4, 2014, Cambridge, UK.