

Ningning ZHANG | Ph.D.

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Work experience

- **Centre International de Metodes Numerics (CIMNE), Barcelona, Spain** **Researcher**
09.2018 - 05.2020
Duty: Development of a contact model for rough crushable sands

Education

- **Universitat Politècnica de Catalunya (UPC), Barcelona, Spain** **Ph.D (*Cum Laude*)**
Department of Geotechnical Engineering 09.2015 - 01.2020
Dissertation: DEM simulation of dynamic penetration in rough crushable sands
Supervisors: Antonio Gens, Marcos Arroyo, Matteo Ciantia (University of Dundee)
- **Beijing Jiaotong University (BJTU) , Beijing, China** **M.Eng**
Department of Tunnel and Underground Engineering 09.2013 - 06.2015
Thesis: Mechanical analysis of tunnel secondary lining of high speed railway
Supervisor: Qian Fang
- **Jiangnan University (JNU), Wuxi, Jiangsu, China** **B.Eng**
Department of Civil Engineering 09.2009 - 06.2013

Awards

- National Scholarship, BJTU, Beijing, 2015
- Outstanding thesis award, BJTU, Beijing, 2015

Academic experience

- **Tongji University, Shanghai, China** 02.2016 - 04.2016
Department of Geotechnical Engineering
Exchange student
- **Université Blaise Pascal, Clermont-Ferrand, France** 08.2016
Department of Geotechnical Engineering
Visiting student
- **Imperial College, London, UK** 03.2017
Department of Geotechnical Engineering
Visiting student

Journal papers

1. **Zhang, N.**, Arroyo, M., Ciantia, M. O., Gens, A., & Butlanska, J. (2019a). Standard penetration testing in a virtual calibration chamber. *Computers and Geotechnics*, 111(3), 277–289. <https://doi.org/10.1016/j.compgeo.2019.03.021>
2. **Zhang, N.**, Ciantia, M. O., Arroyo, M., & Gens, A., (2019b). A contact model for rough crushable particles in a calibration chamber. *Soils and Foundations* (submitted)
3. **Zhang, N.**, Ciantia, M. O., Arroyo, M., & Gens, A., (2019c). Energy balance analysis during the Standard Penetration Test. *Computers and Geotechnics* (submitted)
4. **Zhang, N.**, Fang, Q., Li, Y., & Zhang, D., (2018). Mechanical Analysis of Secondary Lining of High-Speed Railway Tunnel. *KSCE Journal of Civil Engineering*. 22(7):2384-2389

Conference papers

1. **Zhang, N.**, Arroyo, M., Ciantia, M. O., & Gens, A., (2020). Incorporating surface roughness into DEM models of crushable sands, 5th International Itasca Symposium, Vienna, Austria
2. **Zhang, N.**, Arroyo, M., Gens, A., & Ciantia, M., (2018). DEM modelling of dynamic penetration in granular material, 2018, NUMGE conference, Porto, Portugal
3. **Zhang, N.**, Arroyo, M., Ciantia, M., & Gens, A., (2018). DEM investigation of particle crushing effects on static and dynamic penetration tests, China Europe Conference on Geotechnical Engineering, Vienna, Austria
4. Ciantia, M., Arroyo, M., **Zhang, N.**, & Emam, S., (2017). Periodic cells for large-scale problem initialization, 8th International Conference on Micromechanics of Granular Media, Montpellier, France
5. Ciantia, M., **Zhang, N.**, & Arroyo, M., (2017). Enhancing efficiency of DEM modeling of particle breakage, Proceedings of the 25th UKACM conference on Computational Mechanics, 12–13 April, Birmingham, United Kingdom

Oral presentations

1. Energy balance during dynamic driving, *GM3 Geo-mechanics: From micro to macro*, 2017, London, UK
2. The brief introduction and applications of Discrete Element Method, *Xingkong forum*, 2018, Barcelona, Spain
3. DEM modelling of dynamic penetration in granular material, *NUMGE conference*, 2018, Porto, Portugal
4. DEM investigation of particle crushing effects on static and dynamic penetration tests, *China Europe Conference on Geotechnical Engineering*, 2018, Vienna, Austria
5. Incorporating surface roughness into DEM models of crushable soils, *5th International Itasca Symposium*, 2020, Vienna, Austria

Modelling skills

- ✧ Programming: FISH (ITASCA programming language)

✧ Softwares: PFC3D, ABAQUS, MATLAB, ParaView, AutoCAD, etc

Languages

English: fluent, **Spanish:** fluent, **Chinese:** Native