Chenyang Miao

D.O.B: 02/10/1999
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Research Interests

- Investigation on the mechanism of land subsidence under the barrier effect of underground structures
- Numerical simulation of fully coupled three-dimensional land subsidence in Finite Element Method (FEM)
- Investigation on the mechanical behavior of metro tunnels under the influence of ground fissures or land subsidence

Education

- **Nanjing University** | School of Earth Sciences and Engineering 2023/09-Present
  Ph.D. candidate in Engineering Geology, supervised by Prof. Yun Zhang
- **Chang'an University**| School of Geological Engineering and Geomatics 2020/09-2023/06
  Master in Geological Engineering, supervised by Prof. Qiangbing Huang
- **Xi'an shiyou University** | School of Earth Sciences and Engineering 2016/09-2020/06
  Bachelor in Geological Engineering (GPA: 3.9/5.0)

Research Publications

- **Chenyang Miao**, Yun Zhang, Guangyao Hao. "Insights into mechanisms of pumping-induced land subsidence through multiple method investigation", Journal of Hydrology, 2025, 663: 134283 (SCI, IF=6.3, JCR=Q1)
- **Chenyang Miao**, Qiangbing Huang, Yun Zhang. "Analytical solution of the mechanical response of a shield tunnel crossing an active ground fissure zone", International Journal of Geomechanics, 2024, 24(9): 04024192 (SCI, IF=3.3, JCR=Q2)
- **Chenyang Miao**, Qiangbing Huang, Yuxuan Gou, et al. "Theoretical analysis of the overburden stratum load on metro tunnel induced by active ground fissure", Transportation Geotechnics, 2022, 37: 100892 (SCI, IF=5.5, JCR=Q1)
- **Chenyang Miao**, Qiangbing Huang, Yuxuan Gou, et al. "Study on the impact of shield tunnel under-crossing at ground fissure site on existing utility tunnels", Modern Tunnelling Technology, 2022, 59(3): 155-165+171. (in Chinese)

- Qiangbing Huang, **Chenyang Miao**, Yi Yuan, et al. “Failure analysis of metro tunnel induced by land subsidence in Xi’an, China”, Engineering Failure Analysis, 2023, 145: 106996 (SCI, IF=5.7, JCR=Q1)

Research Experiences

Research on the mechanism by which large underground structures impact land subsidence **2024/09-present**

- The Opening Project of Observation and Research Station of Ground Fissure and Land Subsidence, Ministry of Natural Resources, Xi’an, China, Project leader
- Clarified the mechanism of pumping-induced land subsidence and explained why the subsidence lagging behind the change of groundwater level
- Established a numerical model for regional land subsidence in the field within large underground structures taking into soil-structure interaction consideration

Research on the impact mechanism and prevention measures of land subsidence on metro tunnels in loess zone **2021/07-2023/01**

- The National Natural Science Foundation of China (No. 41372328), Main participant.
- Revealed the failure mechanism of tunnel induced by land subsidence
- Proposed an analytical solution to calculate the mechanical response of a shield tunnel crossing an active ground fissure zone
- Identified the deformation and mechanical characteristics of tunnel in the process of active ground fissure dislocation

Conferences Attended

- ***Study on the macro and micro mechanisms of land subsidence induced by groundwater withdrawal and recharging***, presented at the 12th National Congress of Engineering Geology, Shenzhen, China, awarded as **Outstanding Graduate Student Report** 2024/11
- The 14th National Conference on Soil Mechanics and Geotechnical Engineering, Wuhan, China 2023/12

Awards & Honors

- Sun Xiangzhen’s Scholarship of Nanjing University 2024/11
- Academic Scholarship of Nanjing University (First-class) 2024/10
- Outstanding Postgraduate of Nanjing University 2024/12
- Outstanding Graduates of Chang’an University 2023/06
- Outstanding Postgraduate of Chang’an University 2022/10
- Academic Scholarship of Chang’an University (First-class) 2022/12