

# Zhenyi Zhang

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## EDUCATION

### M.S. in Geodesy and Measurement Engineering

09/2020 – 06/2023

- GNSS Research Center, Wuhan University
- GPA (expected): 3.80/4.0, 90/100
- Areas of interest: GNSS and InSAR Supervisor: Yidong Lou
- Master Thesis: .
- Courses: Space Geodesy, GNSS Precise Point Positioning, Satellite Orbiting Theory and Method, Optimal Estimation Theory and Method, Time Series Analysis and Applications, etc.

### B.S. in Navigation Engineering

09/2016 – 06/2020

- School of Geodesy and Geomatics, Wuhan University
- GPA: 3.96/4.0, 94/100 (1/50)
- Courses: C, Matlab, Linux, Optimal Estimation Theory, Geoscience, Geodesy, Geomatics, GNSS, GNSS Receiver Designing, GIS, Inertial Navigation, Satellite Orbiting, Astronomical Navigation, Electronic Map for Navigation, etc.

## RESEARCH EXPERIENCES

### GNSS Precise Point Positioning and Meteorology Applications

10/2020 – 06/2023

- Developed a high-precision GNSS data processing software, i.e., GMET, featuring flexible functions: single- and multi-system, static- and kinetic-positioning, post- and real-time, float- and fixed-ambiguity. (as lead developer)
- Accomplished the real-time GNSS-based water vapor monitoring project for China Meteorological Administration and our GMET software is working continuously on three GNSS stations until now.
- Invented a dynamic stochastic process noise model for GNSS tropospheric delay estimation, and high kinetic UAV experiments demonstrated the significant improvement of the new model for GNSS ZTD estimation.

### InSAR Atmospheric Corrections and Analysis

07/2019 – 06/2022

- Developed InSAR atmospheric products producing tools and InSAR atmospheric correcting tools.
- Investigated the usability of the numerical weather models (especially ERA5 and its predecessor ERA-Interim) for InSAR atmospheric corrections and found their region- and season- and even topography-related characters.

### Numerical Weather Forecast and GNSS Data Assimilation

03/2020 – 06/2023

- Accomplished the complete procedure from generating GNSS meteorology observations to assimilating them into WRF models and forcing weather forecasts.
- Obtained GNSS-based assimilated meteorological products and use them for a large number of applications such as InSAR atmospheric corrections, climate studies, and even in turn for GNSS applications and weather forecasting.

## PUBLICATIONS

### 2022

- [1] **Zhenyi Zhang**, Yidong Lou, Weixing Zhang, Hua Wang, Yaozong Zhou, Jingna Bai. (2022). “Assessment of ERA-Interim and ERA5 reanalysis data on atmospheric corrections for InSAR” *International Journal of Applied Earth Observation and Geoinformation*, 111, 102822. (SCI, impact factor: 7.672)
- [2] **Zhenyi Zhang**, Yidong Lou, Weixing Zhang, Zhipeng Wang, Yaozong Zhou, Jingna Bai, Chuang Shi. (2022). “Dynamic Stochastic Model for Tropospheric Delay Estimation from GNSS Observations on UAV” *Geophysical Research Letters*. (SCI, impact factor: 5.576) (Under review)

[3] Yaozong Zhou, Yidong Lou, Weixing Zhang, Jingna Bai, **Zhenyi Zhang**. “On the Accuracy and PPP Performance Evaluation of the Latest Generation of Real Time Tropospheric Mapping Function” *Geomatics and Information Science of Wuhan University* 46(12):1881-1888. (EI)

## 2021

[4] **Zhenyi Zhang**, Yidong Lou, Weixing Zhang, Hua Wang, Yaozong Zhou, Jingna Bai. (2021). “On the Assessment GPS-Based WRFDA for InSAR Atmospheric Correction: A Case Study in Pearl River Delta Region of China”. *Remote Sensing* 13(16): 3280. (SCI, impact factor: 5.349)

[5] Yaozong Zhou, Yidong Lou, Weixing Zhang, Jingna Bai, **Zhenyi Zhang**. (2021). “An improved tropospheric mapping function modeling method for space geodetic techniques” *Journal of Geodesy*, 95, 98. (SCI, impact factor: 4.809)

[6] Jingna Bai, Yidong Lou, Weixing Zhang, Yaozong Zhou, **Zhenyi Zhang**, Chuang Shi. (2021). “Assessment and calibration of MODIS precipitable water vapor products based on GPS network over China” *Atmospheric Research*, 254, 105504. (SCI, impact factor: 5.965)

## PRESENTATIONS

[1] **Zhenyi Zhang**, Weixing Zhang, Yidong Lou, Yaozong Zhou, Jingna Bai, Zhixuan Zhang. “NWM/GNSS tightly coupled tropospheric delay estimation and application on an unmanned aerial vehicle (UAV) platform”, EGU General Assembly 2022. (Oral)

[2] **Zhenyi Zhang**, Weixing Zhang, Yidong Lou, Hua Wang, Yaozong Zhou, Jingna Bai. “On the Assessment of ERA5 and GPS-Based WRFDA for InSAR Atmospheric Correction”, Scientific Assembly of IAG 2021. (Oral)

## SOCIAL ACTIVITIES

• Class monitor (B.S.)	06/2017 – 06/2020
• Class monitor (M.S.)	09/2020 – now
• Teaching Assistant in Optimal Estimation Theory and Method	01/2019 – 01/2020
• Assistant Class Teacher	09/2019 – 09/2020

## AWARDS & HONOURS

• Top Ten Youths Honour, Wuhan University (only 10 winners per year in the university)	2020
• Excellent Bachelor's degree thesis, Wuhan University (4/450)	2020
• Distinct Graduate, School of Geodesy and Geomatics	2020
• Good Role Models Honors, Wuhan University (only 12 winners per year in Undergraduates)	2019
• Pacemaker to Merit Student (1/450)	2018&2019
• Merit Student	2017
• Outstanding student leaders, Wuhan University	2018&2019&2021
• First Prize Scholarship for Graduates, Wuhan University (¥4000)	2021
• Jin Tongyin scholarship, Wuhan University (¥5000)	2021
• Lei Jun scholarship, Wuhan University (¥20000, 1/450)	2019
• Yu Gang & Song Xiao scholarship, Wuhan University (¥20000, 1/450)	2018
• National Scholarship, Ministry of Education, P. R. China(¥8000, 0.2% Chinese Undergraduates)	2017
• First Prize Scholarship, Wuhan University (¥3000)	2017&2018&2019&2021

## SKILLS

**Computer Skills:** C, Matlab, FORTRAN, Python, Perl, GMT, Microsoft Office.

**Language:** IELTS 7.0 (L: 8.0, R: 8.5, W: 6.0, S: 6.0)