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# Dr. Junsheng Ding (丁君生)

# Curriculum Vitae

Post Doctoral Fellow of The Hong Kong Polytechnic University

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## EDUCATION

1. 2018-2023, PhD, Geodesy, University of Chinese Academy of Sciences, Beijing, China
2. 2018-2023, PhD, Geodesy, Shanghai Astronomical Observatory, CAS, Shanghai, China
3. 2014-2018, BSc, Geomatics Engineering, Chang'an University, Xi'an, China

## RESEARCH INTERESTS

1. Satellite Navigation & Tropospheric Modeling
2. PPP-RTK Atmosphere & AI for Geodesy

## AWARD AND HONORS

1. Outstanding Graduates of Shanghai (2023)
2. National Scholarship for Doctoral Students (2022)
3. Zhu-Li-Yuehua Outstanding Doctoral Scholarship of CAS (2022)
4. First Class Academic Scholarship of UCAS (2021, 2022)
5. Merit Student of UCAS (2020, 2021, 2022, 2023)
6. Individual Scholarship of Chang'an University (2017)
7. The Third Prize of the 10th Challenge Cup Competition of Chang'an University (2017)
8. The First Prize of the 10th Challenge Cup Competition of Chang'an University (2017)
9. National Scholarship for Encouragement (2016)
10. The Third Prize of the 4th ACM-ICPC in Shaanxi Province (2016)
11. The HI-TARGET Scholarship (2015)
12. Ding Family "Zhong Cheng" Education Scholarship (2014)
13. The National Third Prize of the 21st National Applied Physics Knowledge Contest (2011)

## EXPERIENCE

1. 2023.7-Present, Postdoctoral Fellow, The Hong Kong Polytechnic University, Hong Kong, China
2. 2019.9-2021.9, Graduate Assistant, Shanghai Astronomical Observatory, CAS, Shanghai, China
3. 2018.7-2018.8, Summer Trainee, National Institute of Metrology, China, Beijing, China
4. 2017.7-2017.8, Software testing intern, Trimble R&D Center in China, Trimble Inc., Xi'an, China

## PROJECTS

1. Postdoc Matching Fund Scheme, The Hong Kong Polytechnic University.

## PUBLICATIONS

1. **Ding J.S.**, Xu C.C., Chen W., Chen J.P., Wang J.G., Zhang Y.Z., et al. (2025) Impact of VAEformer Compression Algorithm Precision Loss on the Tropospheric Delays for Microwave Remote Sensing. *IEEE Transactions on Geoscience and Remote Sensing*, doi: [10.1109/TGRS.2025.3587944](https://doi.org/10.1109/TGRS.2025.3587944). (SCI)

2. **Ding J.S.**, Chen W., Chen J.P., Wang J.G., Zhang Y.Z., Bai L. (2025) Real-Time High-Resolution Global PWV Retrieval Based on Weather Forecast Foundation Models and Cross-Validation with Radiosonde, GNSS, and ERA5. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, doi: [10.1109/JSTARS.2025.3580782](https://doi.org/10.1109/JSTARS.2025.3580782). (SCI)
3. **Ding J.S.**, Chen W., Chen J.P., Wang J.G., Zhang Y.Z., Bai L., et al. (2025) Spatiotemporal inhomogeneity of accuracy degradation in AI weather forecast foundation models: A GNSS perspective. *International Journal of Applied Earth Observation and Geoinformation*, doi: [10.1016/j.jag.2025.104473](https://doi.org/10.1016/j.jag.2025.104473). (SCI)
4. **Ding J.S.**, Mi X.L., Chen W., Chen J.P., Wang J.G., Zhang Y.Z., et al. (2024) Forecasting of Tropospheric Delay using AI Foundation Models in support of Microwave Remote Sensing. *IEEE Transactions on Geoscience and Remote Sensing*. doi: [10.1109/TGRS.2024.3488727](https://doi.org/10.1109/TGRS.2024.3488727). (SCI)
5. **Ding J.S.**, Chen J.P., Wang J.G. and Zhang Y.Z. (2024) A novel method for tropospheric delay mapping function vertical modelling, *Journal of Geodesy*, doi: [10.1007/s00190-024-01845-2](https://doi.org/10.1007/s00190-024-01845-2). (SCI)
6. **Ding J.S.**, Chen J.P., Wang J.G. and Zhang Y.Z. (2023) Characteristic difference of tropospheric delay between Nevada Geodetic Laboratory products and NWM ray-tracing, *GPS Solutions*, doi: [10.1007/s10291-022-01385-2](https://doi.org/10.1007/s10291-022-01385-2). (SCI)
7. **Ding J.S.**, Chen J.P., Tang W.J. and Song Z.Y. (2022) Spatial–Temporal Variability of Global GNSS-Derived Precipitable Water Vapor (1994–2020) and Climate Implications, *Remote Sensing*, doi: [10.3390/rs14143493](https://doi.org/10.3390/rs14143493). (SCI)
8. **Ding J.S.**, Chen J.P. and Tang W.J. (2022) Increasing Trend of Precipitable Water Vapor in Antarctica and Greenland, China Satellite Navigation Conference 2022, *Lecture Notes in Electrical Engineering*, doi: [10.1007/978-981-19-2588-7\\_27](https://doi.org/10.1007/978-981-19-2588-7_27). (EI)
9. **Ding J.S.**, Chen J.P. and Wang J.G. (2020) Quality Control Method for ZTD Modeling Based on GNSS Observation Data, *Journal of Astronautics*, doi: [10.3873/j.issn.10001328.2020.09.010](https://doi.org/10.3873/j.issn.10001328.2020.09.010). (in Chinese) (EI)
10. **Ding J.S.** and Chen J.P. (2020) Assessment of Empirical Troposphere Model GPT3 Based on NGL's Global Troposphere Products, *Sensors*, doi: [10.3390/s20133631](https://doi.org/10.3390/s20133631). (SCI)
11. **Ding J.S.** (2024) Research on GNSS tropospheric delay modeling and spatial-temporal characteristics analysis of bias, *Acta Geodaetica et Cartographica Sinica*, doi: [10.11947/j.AGCS.2024.20230177](https://doi.org/10.11947/j.AGCS.2024.20230177). (EI)
12. **Ding J.S.** and Chen J.P. (2021) Accuracy Variability of GNSS PWV in the Range of Small and Medium Scale Areas, China Satellite Navigation Conference, *CSNC 2021*, doi: [10.26914/c.cnkihy.2021.002146](https://doi.org/10.26914/c.cnkihy.2021.002146).
13. Liu T., Chen W., Mi X.L., Chen X.Y., Yang Y., **Ding J.S.**, et al. (2026) Ionospheric nonlinear interpolation model for Mid- and Low-latitude network RTK during solar maxima. *GPS Solutions*, doi: [10.1007/s10291-025-01976-9](https://doi.org/10.1007/s10291-025-01976-9). (SCI)
14. Chen W., **Ding J.S.**, Wang Y.Y., Mi X.L., and Liu T. (2025) A Novel Network RTK Technique for Mobile Platforms: Extending High-Precision Positioning to Offshore Environments. *TransNav the International Journal on Marine Navigation and Safety of Sea Transportation*, doi: [10.12716/1001.19.02.04](https://doi.org/10.12716/1001.19.02.04). (SCI)
15. Deng Y.F., Chen W., **Ding J.S.**, El-Mowaf A., Weng D.J., Tang L., et al. (2025) Improving GNSS precise point positioning with tropospheric constraints from data-driven numerical weather prediction model. *Geospatial Information Science*, doi: [10.1080/10095020.2025.2513650](https://doi.org/10.1080/10095020.2025.2513650). (SCI)
16. Chen J.P., Song Z.Y., Zhang Y.Z., **Ding J.S.**, et al. (2025) Clock systematic jump estimation and URA refinement of BDS-3 B2b real-time precise point positioning service. *GPS Solutions*, doi: [10.1007/s10291-025-01835-7](https://doi.org/10.1007/s10291-025-01835-7). (SCI)
17. Bai Q., Kong Q., Mi X., Chen W., **Ding J.S.**, et al. (2025) Evaluation and analysis of the precipitable water

vapor in Inner Mongolia of China. *Earth Planets Space*. doi: [10.1186/s40623-025-02157-1](https://doi.org/10.1186/s40623-025-02157-1). (SCI)

18. Tang W.J., Chen J.P., Zhang Y.Z. and **Ding J.S.** (2024) Analysis of GNSS/Pseudolite Integrated Positioning Accuracy in Urban Canyon Environment. *2024 14th International Conference on Indoor Positioning and Indoor Navigation (IPIN)*. doi: [10.1109/IPIN62893.2024.10786141](https://doi.org/10.1109/IPIN62893.2024.10786141). (EI)
19. Tang W.J., Chen J.P., Zhang Y.Z., **Ding J.S.** and Song Z.Y. (2024) Refined Troposphere Delay Models by NWM Ray-tracing for Pseudolite Positioning System and Their Performance Assessment, *Advances in Space Research*, doi: [10.1016/j.asr.2024.02.034](https://doi.org/10.1016/j.asr.2024.02.034). (SCI)
20. Song Z.Y., Chen J.P., Zhang Y.Z., Yu C. and **Ding J.S.** (2023) Real-time Multi-GNSS Precise Point Positioning with Ambiguity Resolution Based on the BDS-3 Global Short-message Communication Function, *GPS Solutions*, doi: [10.1007/s10291-023-01477-7](https://doi.org/10.1007/s10291-023-01477-7). (SCI)
21. Cui J., Chen J.P., Wang B., Yu C., **Ding J.S.** and Wang R.Y. (2022) Characteristic Analysis of Satellite DCB Products Provided by DLR and CAS, *Progress in Astronomy*. doi: [10.3969/j.issn.1000-8349.2022.03.01](https://doi.org/10.3969/j.issn.1000-8349.2022.03.01). (in Chinese) (CSCD)
22. Chen J.P., Zhang Y.Z., Yu C. and **Ding J.S.** (2022) Processing Algorithms and Performance Evaluation of BDS RDSS Location Reporting Service, *Acta Geodaetica et Cartographica Sinica*. (in Chinese) (EI)
23. Tang W.J., Chen J.P., Yu C., **Ding J.S.** and Wang R.Y. (2021) A New Ground-based Pseudolite System Deployment Algorithm Based on MOPSO, *Sensors*, doi: [10.3390/s21165364](https://doi.org/10.3390/s21165364). (SCI)
24. Chen Q., Chen J.P., Yu C., Zhang Y.Z. and **Ding J.S.** (2020) Comparison of BDS Station Clock Short-term Prediction Models and their Applications in Precise Orbit Determination, *Chinese Astronomy and Astrophysics*, doi: [10.1016/j.chinastron.2020.05.008](https://doi.org/10.1016/j.chinastron.2020.05.008). (SCI)
25. Chen J.P., Wang J.G., Wang A.H., **Ding J.S.** and Zhang Y.Z. (2020) SHAtropE—A Regional Gridded ZTD Model for China and the Surrounding Areas, *Remote Sensing*, doi: [10.3390/rs12010165](https://doi.org/10.3390/rs12010165). (SCI)

## ACADEMIC REPORT

1. **Ding J.S.** (2025), *GNSS Tropospheric Delay Forecast Platform Based on AI Foundation Models*, Speaker, International Association of Professionals in Global Navigation Satellite Systems (CPGNSS) Forum 2025, Oral, 19–20 Jul., 2020, Nanchang.
2. **Ding J.S.**, Chen W. Chen J.P., Wang J.G., Zhang Y.Z., et al. (2024), *AI Foundation Models Facilitate Real-time GNSS Precipitable Water Vapor Retrieval with Sub-millimeter Accuracy*, Poster, Croucher Advanced Study Institute (ASI)-Revolutionizing Weather Forecast and Climate Prediction Through Artificial Intelligence, held on 19–21 Sep, 2024 in Hong Kong.
3. **Ding J.S.** (2024), *Generation and evaluation of high-precision satellite navigation tropospheric products based on AI foundation models*, Speaker, Chang'an University, 20–26 Sep, 2024 in Xian.
4. **Ding J.S.**, Chen J.P. and Tang W.J. (2022), *Increasing Trend of Precipitable Water Vapor in Antarctica and Greenland*, Speaker, China Satellite Navigation Conference 2022, Session S01–Industry Applications of Satellite Navigation, held on 25–27 May, 2022 in Beijing.
5. **Ding J.S.**, Chen J.P. and Tang W.J. (2022), *Increasing Trend of Precipitable Water Vapor in Antarctica and Greenland*, Speaker, EGU General Assembly 2022, Session G5.2–Atmospheric and Environmental Monitoring with Space-Geodetic Techniques and Contributions to Extreme Weather Studies, held on 23–27 May, 2022 in Vienna, Austria. [[link](#)]
6. **Ding J.S.** and Chen J.P. (2021), *Global GNSS PWV Accuracy Assessment and Spatio-temporal Characteristics Analysis (1994-2020)*, Speaker, 4-th Congress of China Geodesy and Geophysics (4-th CCGG), CNC-IAMAS, M01: Atmospheric Sounding and Remote Sensing, held on July 17-18, 2021 in Qingdao. [[link](#)]

7. **Ding J.S.** and Chen J.P. (2021), *Long-period Accuracy Evaluation and Spatial-temporal Characterization Analysis of Global GNSS-derived PWV*, *Speaker*, Scientific Assembly of the International Association Geodesy (IAG2021), Session 5.5: Assimilation of Geodetic Observations in the Modelling of the Atmosphere, Cryosphere and Hydrosphere (Joint ICCG), held on June 28 - July 2, 2021 in Beijing. [[link](#)]
8. **Ding J.S.** and Chen J.P. (2020), *Assessment of Empirical Troposphere Model GPT3 Based on NGL's Global Troposphere Products*, *Speaker*, International Association of Professionals in Global Positioning Systems (CPGPS) Forum 2020, Session 5: System and Design of Navigation Signal, held on Nov. 12-15 2020 in Shanghai. [[link](#)]