Fengxiang Guo — Curriculum Vitae

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Academic Education

02/2020 - 04/2024 (expected)	**Ph.D. in Geography**, Dissertation: *How urban morphology affects land surface temperature* Faculty of Physics and Earth System Sciences, Leipzig University, Germany
09/2015 - 06/2018	**MSc in Geodesy and Surveying Engineering,** College of Geo-exploration Science and Technology, Jilin University, China
09/2011 - 06/2015	**B.S. in Surveying and Mapping Engineering,** College of Geo-exploration Science and Technology, Jilin University, China

Research experience

04/2021 - present	Research assistant, Department of Urban and Environmental Sociology, UFZ
09/2019 - 12/2019	Research assistant, Department of Urban and Environmental Sociology, UFZ

Research Interest

- Methodology to improve resolution and accuracy of land surface temperature
- Urban morphology options and large-scale mapping
- Spatiotemporal observations of urban morphology and heat environment using satellites/UAVs
- Modelling, assessment and prediction of urban heat islands
- Impacts of urbanization on urban morphology and further on the heat environment
- Surface heat transfer and the dependence on urban morphology

Honors & Awards

2023	Joint Urban Remote Sensing Event (JURSE), 2023 (one of the best student papers)
2020	The China Scholarship Council (CSC) funded students
2019	Excellent master's academic degree thesis of Jilin province

Editorial Responsibilities

2023 - Topic Coordinators, *Frontiers in Built Environment*

Journal Reviewer

ISPRS Journal of Photogrammetry and Remote Sensing *Environmental Earth Sciences*

Landscape and Urban Planning	*Ecological Indicators*
Sustainable Cities and Society	*Land Use Policy*
Science of The Total Environment	*Journal of Mountain Science*
International Journal of Applied Earth Observation and Geoinformation	*Remote Sensing*
Urban Climate	*Sustainability*
Landscape Ecology	*Land*

Working Papers

- "Remote sensing - based attribution of urban heat islands to the drivers of heat", *Minor revision, IEEE Transactions on Geoscience and Remote Sensing* (updated Feb 07, 2024)
- "Surface energy balance-based surface urban heat island decomposition at high resolution", *Under Review, Remote Sensing of Environment* (updated Jan 19, 2024)
- "Analyzing the effects of 2D/3D urban morphology on diurnal cooling efficiency of urban green space", *Under Review, Sustainable Cities and Society* (updated Feb 03, 2024)

Published Publications

- **Guo F**, Schlink U, Wu W, et al. A new framework quantifying the effect of morphological features on urban temperatures. *Sustainable Cities and Society*, 2023: 104923.
- **Guo F**, Schlink U, Wu W, et al. Scale-dependent and season-dependent impacts of 2D/3D building morphology on land surface temperature. *Sustainable Cities and Society*, 2023, 97: 104788.
- Wu, W. B., Ma, J., Banzhaf, E., Meadows, M. E., Yu, Z. W., **Guo, F**., ... & Zhao, B. A first Chinese building height estimate at 10 m resolution (CNBH-10 m) using multi-source earth observations and machine learning. *Remote Sensing of Environment*, 2023, 291: 113578.
- **Guo F**, Schlink U. A nationwide dataset of building features for Germany[C]//*2023 Joint Urban Remote Sensing Event (JURSE). IEEE*, 2023: 1-4.
- **Guo F**, Schlink U, Wu W, et al. Differences in Urban Morphology between 77 Cities in China and Europe. *Remote Sensing*, 2022, 14(21): 5462.
- **Guo F**, Hu D, Schlink U. A new nonlinear method for downscaling land surface temperature by integrating guided and Gaussian filtering. *Remote Sensing of Environment*, 2022, 271: 112915.
- Hu, D., Meng, Q., Schlink, U., Hertel, D., Liu, W., Zhao, M., & **Guo, F**. How do urban morphological blocks shape spatial patterns of land surface temperature over different seasons? A multifactorial driving analysis of Beijing, China. *International Journal of Applied Earth Observation and Geoinformation*, 2022, 106: 102648.
- Wu, Q., Li, Z., Yang, C., Li, H., Gong, L., & **Guo, F**. On the scale effect of relationship identification between land surface temperature and 3D landscape pattern: The application of random forest. *Remote Sensing*, 2022, 14(2): 279.
- **Guo F**, Wu Q, Schlink U. 3D building configuration as the driver of diurnal and nocturnal land surface temperatures: Application in Beijing's old city. *Building and Environment*, 2021, 206: 108354.

- Wu Q, Tan J, **Guo F**, et al. Multi-scale identification of urban landscape structure based on two-dimensional wavelet analysis: The case of metropolitan Beijing, China. *Ecological complexity*, 2020, 43: 100832.
- Wu Q, Tan J, **Guo F**, et al. Multi-scale relationship between land surface temperature and landscape pattern based on wavelet coherence: the case of metropolitan Beijing, China. *Remote Sensing*, 2019, 11(24): 3021.
- Wu Q, **Guo F**, Li H. Wavelet-based correlation identification of scales and locations between landscape patterns and topography in urban-rural profiles: case of the Jilin City, China. *Remote sensing*, 2018, 10(10): 1653.
- Wu Q, **Guo F**, Li H, et al. Measuring landscape pattern in three dimensional space. *Landscape and Urban Planning*, 2017, 167: 49-59.