

RESEARCH SEMINAR

DEPARTMENT OF GEOGRAPHY AND RESOURCE MANAGEMENT
THE CHINESE UNIVERSITY OF HONG KONG

Monitoring and Addressing Global Environmental Challenges with Earth Observations

25 Oct 2023 (Wed)
3:00 – 4:30 pm (UTC+8)
Rm 221, Chen Kou Bun Building, CUHK

Despite occupying less than 4% of the terrestrial Earth surface, urban areas accommodate 55% of the global population and contribute about two-thirds of worldwide energy consumption and more than 70% of GHG emissions. The ongoing global urbanization is expected to bring 2.6 billion new urban dwellers by 2050, while about 60% of the urban land area required to accommodate these new dwellers has yet to be built. These facts present formidable environmental challenges for achieving a sustainable and climate-resilient future.

This talk will discuss the role of geospatial approaches with earth observations in tackling global environmental challenges in two geographical contexts, i.e., urban areas and natural ecosystems. The first part of the talk will introduce how nighttime light images can be used for monitoring inner-city urban land changes and how to address the associated technical challenges in nighttime light image processing. The second part will look into nature-based solutions and how we, as geospatial scientists, can maximize their potential to address climate and sustainability challenges.

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Dr. Qiming Zheng is a Research Assistant Professor in the Department of Land Surveying and Geo-Informatics at the Hong Kong Polytechnic University. Before joining PolyU, he was a Research Fellow at the Centre for Nature-based Climate Solutions at the National University of Singapore. His research centers on using geospatial techniques, environment and earth system models, and GeoAI approaches to address cutting-edge challenges in global environmental changes, urban sustainability, and climate change mitigation. He has published more than 30 peer-reviewed articles, including first-author publications in *Nature Communications*, *Remote Sensing of Environment*, and *ISPRS Journal of Photogrammetry and Remote Sensing*.



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