

# LSGS & RILS RESEARCH SEMINAR

## InSAR and Remote Sensing Insights into Acute, Subacute, and Chronic Natural Hazard Dynamics

**26 NOV 2026 (THU)**
**16:00 - 17:00**
**BC202, POLYU**
**ENGLISH**


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## ABSTRACT

Natural hazards reflect diverse Earth-system processes, differing in their triggering mechanisms, physical characteristics, and evolutionary timescales. From a process-oriented perspective, they can be broadly classified as acute, subacute, or chronic. Acute hazards, such as earthquakes, landslides, floods, and wildfires, develop rapidly and often cause immediate impacts. Subacute hazards, such as permafrost degradation and thermokarst, exhibit intermediate timescales and complex evolutionary trajectories. Chronic hazards, including land subsidence and sea-level rise, evolve gradually through prolonged and often interacting processes. This study explores the dynamics of these hazards using InSAR and multi-sensor remote sensing, focusing on their temporal evolution, physical mechanisms, and characteristic geometric signatures. By integrating complementary observations with process-based interpretations, we highlight the potential of transferable remote sensing approaches to advance hazard detection, monitoring, and physical understanding across diverse environments and timescales.


## BIOGRAPHY

Xie HU is an Assistant Professor at Peking University whose research integrates satellite geodesy, remote sensing, geophysical modeling, and AI to better understand natural hazards and environmental changes associated with landslides, groundwater depletion, coastal subsidence, permafrost degradation, floods, earthquakes, and planetary surface processes. Xie has led research resulting in ~40 peer-reviewed publications in journals such as *Nature Communications, Nature Cities, EPSL, JGR, GRL, WRR, WR, and The Cryosphere*. She has also contributed to collaborative studies published in Science and Science Advances. She has received AGU Natural Hazards Early Career, NASA Early Career, NSFC Early Career (Overseas). Additionally, she serves as an Associate Editor for *JGR: Machine Learning and Computation and Pure and Applied Geophysics*.

**Moderator:**
**Prof. Guoqiang SHI, Assistant Professor of LSGS, member of RILS**

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