Quantitative Analysis of Natural Hazards Empowered by AI / Remote Sensing

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Zoom Link **(Mixed-mode)**

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Everyone on the Earth is exposed to natural hazards. The vulnerability has become more evident from recent extreme climate events. How to quantitatively assess the hazardous processes and what is the triggering mechanisms are two critical questions for hazard preparation and resilience. A synergy of remote sensing big data and AI methodologies provide the most likely solution by accurately resolving the spatiotemporal surface disturbances, i.e., ground deformation and land cover changes. Here I will review our attempts in using geodetic InSAR data to invert for the geometrical and hydrogeological properties of active landslides. I will also present our ongoing work about climate-driven hazards on multi-annual inventorying of retrogressive thaw slumps and permafrost degradation, semantic segmentation of basin-wide flood inundation areas for its complete lifespan, and the hastened seawater intrusion by coastal subsidence against sea level rise.

EARTH AND ENVIRONMENTAL SCIENCES PROGRAMME

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