

Invited

8th Wilson Tang Lecture: Digital-twin Empowered Landslide Risk Management

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In the digital era, digital twin emerges as a powerful tool to empower landslide emergency management. A digital twin is a virtual representation of a physical system that is updated through the exchange of information between the physical and virtual systems. In this lecture, I will introduce a unique city-scale digital twin as an integrated platform for managing landslide and flood hazards and coordinating societal responses. The digital twin comprises a digitized reality of the entire Hong Kong, a space-aerial-ground sensing network, and simulation and risk assessment engines. The slope safety system, natural environment and infrastructural layers of Hong Kong have been digitized in 3D GIS or BIM form. The digital twin is capable of monitoring, simulating, and displaying both hazard and societal response processes, and hence enables more effective disaster risk management.