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## **GIS and Remote Sensing**

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## Applications of GIS and remote sensing in lansdlide hazard assessment

Landslides cause billions of dollars in damages and thousands of deaths and injuries globally each year. Generating landslide inventory, landslide susceptibility and landslide risk maps in landslide-prone areas are the essential steps for landslide risk assessment and management. A landslide hazard assessment can be carried out by direct mapping, heuristic, deterministic, stochastic and probability analyses. While field investigation and field mapping of the geological, hydrogeological, and geomorphological characteristics of existing landslides in the study area are essential for landslide hazard assessment, geographic information system (GIS) and remote sensing technologies can agevolate the landslide hazard assessment in a more time-efficient and cost-effective manner. This presentation focuses on GIS-based landslide susceptibility study and applied optical and radar remote sensing approaches for landslide hazard assessment will be demonstrated through case studies, such as a GIS-based landslide susceptibility study in Central America, a land cover classification study along the foothills of the Rocky Mountains by using hyperspectral remote sensing, a landslide displacement monitoring in Colorado by using ground-based interferometric radar (GBIR) technique, and a study of a rock avalanche in Alaska by using high-resolution stereo optical satellite imagery.

## **Biography**

Wendy Zhou received her PhD Degree in Geological Engineering from Missouri University of Science & Technology in 2001. Currently, she is the Dean of Graduate Studies and an Associate Professor of Geological Engineering at the Colorado School of Mines. She has graduated 14 Master's and three PhD students. She has published more than 50 papers in peer-reviewed journals or peer-reviewed conference proceedings. She has also contributed to seven book chapters and has been serving as an Associate Editor of *Journal of Applied Remote Sensing* since 2014.

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