



## **Remote Detection and Analysis of Mass Movements in the Catchment Area of the Xiangxi River/ China**

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The overall goal of this project is to develop a better understanding of mechanisms and triggers of mass movements in an area influenced by the rising water level in Three Gorges Dam and to estimate the probability of their occurrence. Investigations are carried out for the Xiangxi river catchment area, a tributary of the Yangtze River discharging into the Three-Gorges-Dam reservoir.

In this context, we focus at methodological and conceptual strategies that allow the correlation between recent mass movements with associated soils and lithologies, developed slopes, vegetation coverage and rainfall data. The results provide essential contributions to the estimation of the risk potential and thus, to the safety and future usability of the river banks. To meet the requirements, a synergetic approach of optical imaging and InSAR measurements and advanced remote sensing techniques for data extraction and monitoring are investigated: The differential INSAR method to monitor initial movements along the river banks and optical data for the detection and differentiation of varying soil and rock types as well as for the identification and quantification of vegetation canopies. In addition, geologic structures are deduced from high resolution data and correlated with collected field data. The combination and intersection of remotely derived information with existing thematic data and field knowledge within a GIS system allows for the estimation of the envisaged risk potential.