Research Group of Mountain Hazards and Mitigation
Institute of Mountain Hazards and Environment, Chinese Academy of Sciences

Field study of mountain hazards along the Sichuan-Tibet Railway

Engineering mitigation for debris flow hazard (check dam)

The research group is geared towards addressing significant strategic needs related to national disaster mitigation, engineering safety, and the “Belt and Road” initiative. They have proposed theories on the spatial-temporal evolution of mountain hazards and developed systematic solutions for disaster chains through theoretical innovation, technology development, and by proposing relevant mitigation strategies. Their study results have significantly and systematically contributed to disaster mitigation in essential cities and towns, world Natural Heritage sites, cascade hydropower projects along the upper reaches of the Yangtze River, major transportation arteries, and oil and gas pipelines in the Western mountain areas. They also provided scientific support for the Sichuan-Tibet Railway route alignment and critical node risk management. The research group is also actively involved in the hazard mitigation and emergency response of more than 30 catastrophic events at home and abroad, including colossal earthquakes, devastating debris flows, giant landslides and dangerous dammed lakes. They also strongly support the “Three Changes” National Strategy on disaster prevention, reduction and relief. Their tremendous and continuous dedication to global disaster risk reduction and mitigation endeavors have received outstanding international scientific recognition.

Outstanding contributors of this research group

Cui Peng

He studied the triggering and formation mechanism of debris flow, proposed methods for quantitative risk assessment, developed a technical system of mountain disaster prevention and control, and is leading the scientific research on mountain disasters.

He Siming

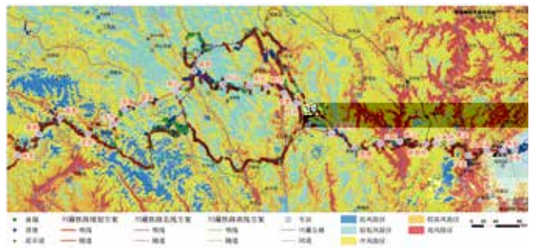
He studied the dynamics of mountain hazard and disaster chains, and an efficient numerical simulation method which is physical law based is proposed to simulate the evolution process of mountain disaster chains.

Chen Ningsheng

He investigated the initiation of debris flows due to the combination effects of earthquake and drought, developed technologies for monitoring and prediction of debris flows in complex mountainous areas.

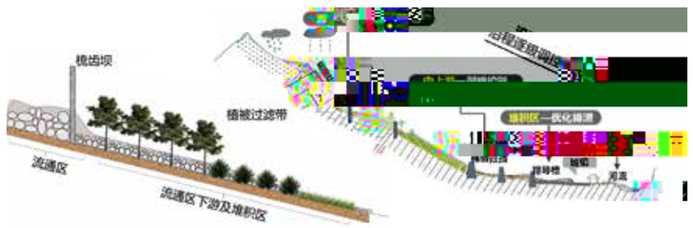
Major Contributors

You Yong
Chen Xiaoqing
Hu Kaiheng
Su Lijun
Zhou Gongdan
Ouyang Chaojun
Ge Yonggang
Chen Jiangang
Jiang Yuanjun
Li Xinpo
Chen Huayong
Guo Xiaojun
Li Yong
Liu Jinfeng
Yang Zongji
Zou Qiang
Su Fenghuan

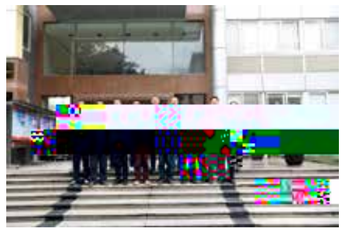


“ — ”

Distribution and risk assessment of mountain hazards along the Sichuan-Tibet Railway (from Yaan to Linzhi)



Technology of systematic regulation of mountain hazards whole process



Group photo

研究集体主要科技贡献：

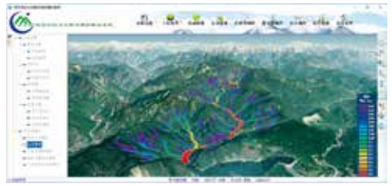
研究集体突出贡献者

Cui Peng

He Siming

Chen Ningsheng

研究集体主要完成者



High-precision and real-time numerical simulation platform for mountain hazards

“ ”

Zoning of natural disasters along the Belt and Road