

Application of Dendrogeomorphology in the Research of Geological Disasters

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Abstract: Geological disasters can cause not only human life and property loss , but also drastic environmental changes. Reconstruction of past geological disasters helps understand occurrence frequency and reduce potential loss of future disasters. Dendrogeomorphology has great potentials in reconstruction of past landslides , earthquakes and debris flows. With use of dendrochronological information , year or month of earthquakes , landslides and debris flows can be determined. In combination of meteorological and geomorphological data , tree-ring data can be used to seek potential causes of geological disasters. Most studies are based on conifers and use of flowering trees will increase usefulness of dendrogeomorphology. Most of dendrogeomorphological studies are carried out in Europe , North America and New Zealand.

Key words: dendrochronology; natural disasters; earthquakes; landslide; debris flows

封面照片: 沟源崩塌

发生在沟谷源头的崩塌 称为沟源崩塌 ,它是地表侵蚀作用的一种方式 ,也是一种地貌现象。由于它是在沟谷(或河流) 源头产生的侵蚀作用 ,结果使源头不断地向上移动 ,导致谷地延长 ,因此这种侵蚀作用又是溯源侵蚀(向源侵蚀) 的一种。一般在由松散堆积物组成的沟谷源区 ,沟源崩塌发生频繁 ,溯源侵蚀发展较快 ,如中国西北地区的黄土高原上黄土广布、西南地区的云南元谋等地红土层和棕黄色土层分布范围较大 ,成为了冲沟发育、沟源崩塌活跃、溯源侵蚀强烈的地区 ,往往沟壑纵横 ,水土流失严重 ,植被稀疏 ,生态环境恶化。照片为雅砻江支流安宁河中游左岸的一条沟谷(德昌县境内) 的沟源崩落地貌。

(嘉 益)