

Estimation of Soil Erosion Caused by the 5·12 Wenchuan Earthquake

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Abstract: The Wenchuan earthquake on May 12, 2008 has induced many secondary disasters, such as collapse, landslide, dammed lake, as well as a wide range of soil erosion. Based on the image data from Beijing No. 1 small satellite, it is estimated that collapses and landslides cover a total area of 2 264.53 km² in the heavy disaster areas. Furthermore, distribution of the total erosive area is analyzed with respect to the subregions in radius of 5 km, 10 km, 30 km, 50 km, 100 km respectively from the major fault. Besides, the erosive depth has been estimated by field investigation. Consequently, the amount (quantity) of soil erosion of collapse and landslide is about 55.86×10^8 ton. In addition, the erosion quantity from the 34 major dammed lakes is estimated as 1.87×10^8 ton. Thus the soil erosion in the quake-hit area amounts to the quantity in a whole year before. Finally, some problems involved in the estimation are discussed.

Key words: Wenchuan earthquake; soil erosion; landslide; dammed lake; estimation

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