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Short term climate change at high mountain area of Taiwan

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Frost action is one of the important environmental factors in alpine and periglacial climate. Among them, freeze-thaw process is the most influential geomorphologic process in the high mountain of Taiwan. Freeze-thaw weathering and solifluction movement shapes the landform in high mountain area of Taiwan. In this study, the air and ground temperature data of Mt. Hohuan was used to frequency and distribution of freeze-thaw process.
The Peak of Mt. Hohuan (N24°08' 42" E121°15' 47") at 3416m above sea level which had a periglacial climate environment since last glacial periods. For the weathering and erosion study, it is important to track the climate data available.
According to ground temperature data in Mt. Hohuan collected from 2005 to 2008, frequency of freeze-thaw processes at depth of 10 , 20 and 30cm was 44, 72 and 16 times per year respectively. The freeze-thaw process was weak at depth of 20cm. It was most frequent in autumn and spring. The measured and estimated ground temperature data are middle correlated, the R-square value is 0.52.
As a result, the Mt. Hohuan had a rapid physical weathering of slate by freeze-thaw process. The process also caused many head ward erosion of river channel. This paper demonstrates such phenomena.
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