

Preliminary study on formative factor of uphill facing scarplets based on bell-shape index of high relief mountains

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Double ridges or up-hill facing scarplets distributed on mountain ridge in high relief are known as indicators that mountain bodies are undergoing gravitational creep deformation and as signs of landslide in large scale.

Mountain ridges in northern part of Hida Range (Northern Japan Alps) show gentle and round and are fringed by distinct break of slopes. Mountain profiles of high contrast between steep lower slope and gentle ridge ridge tops are similar to a bell-shaped mountains of high relief. In another word, the bell-shaped profile is one kind of the convexity in ridge profiles. The authors think this index is a good marker of gravitational rock creep and a subsequent deformation of mountains. However, there sometimes develop up-hill facing scarplets on low convexity slope in that area. This study tries to consider contribution of strike slip faults as to the formation of up-hill facing scarps on such slopes.

Keywords: gravitational deformation, bell-shape index, high relief mountain, strike slip active fault