

## Patterns of slopes and geological structure in the Atsuma River catchment, Hokkaido

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The M6.7 Hokkaido Eastern Iburi Earthquake on 6 September 2018 induced numerous shallow landslides in the Atsuma River catchment and surrounding areas. The induced shallow landslides show several features in shape. One type has planar slip-surfaces mostly on gentler slopes, while another has V-shaped slip-surfaces generally on steeper slopes. It was anticipated that these slip features were fundamentally controlled by the geological structure because the Atsuma area lies in the E-W compressed geological setup. Folds, anticlines, synclines and domes have developed as the basement structure of the area, which may have formed gentle, planar slopes along the dip of the basement and steep, V-shaped slopes perpendicular to the dip angle, i.e. a cuesta landform.

However, field evidence indicates that V-shaped slip-surfaces formed along the dip of the basement and planar slip-surfaces developed on slopes perpendicular to the dip of the basement. This landform might be recognized as a 'reverse cuesta'. We discuss possible mechanisms of the formation of this unanticipated, surprising feature developed in the Atsuma area.

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