

Comparison of tectonic geomorphology using digital stereoscopic topographic map

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Accumulation of digital-elevation data and development of visualize technique for them has enabled to multi-scale geomorphic readings based on geomorphic feature which is different from aerial photograph and satellite images. We present examples on tectonic geomorphology readings of Median Tectonic Line, Adera Fault, Inazani Faults and Senya Fault, using four kind of digital stereoscopic topographic maps (DSTM) by Yokoyama et al. (2012). We focus on differences in distinguishability among their maps. Shaded-relief map shows topographic roughness as shade. Digital stereoscopic slope map (DSSM) shows finer variations in surface structure. Positive values of topographic openness are high for convex forms, whereas negative values are high for concave forms, so digital stereoscopic positive openness map (DSPOM) and digital stereoscopic negative openness map (DSNOM) emphasize ridges and valleys. Fault scarp and terrace scarp are identified clearly from DSSM. Stream-offset and col along strike-slip fault well represent in DSNOM. By using DSSM, DSPOM and DSNOM, we can identify more various topographic patterns clearly than that from shaded-relief map. We hope that the digital stereoscopic topographic maps can be not only researcher's tool but also useful materials for education and disaster prevention.

Keywords: tectonic geomorphology, strike-slip fault, dip-slip fault, digital stereoscopic topographic map