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2014 年長野県北部地震（Mw6.2) の地表地震断層の構造特徴
Structural features of co-seismic surface ruptures produced by the 2014 Mw 6.2 Nagano earthquake, central Japan

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2014 年 11 月 22 日に長野県で Mj 6.8 (Mw 6.2) の地震が発生し、震源周辺域に大きな被害をもたらした。地震直後の現地調査により、１）総延長 9.3 km の地表地震断層はほぼ既存の活断層-神城断層沿い現れたことと、２）地表地震断層は横ずれ成分を伴った逆断層であることと、３）最大 0.7m の左横ずれを伴う鉛直変位量は 5cm から 1.5 m (おおよそ 0.5?1 m) であったことなどが明らかになった。地表地震断層は、明瞭な断層崖、雁行割れ目、モールトラック・撓曲構造や噴砂を含む地表の変形構造により特徴付けられる。

Field investigations reveal that the Mj 6.8 (Mw 6.2) Nagano (Japan) earthquake of 22 November 2014 produced a 9.3-km-long co-seismic surface rupture zone. Slip occurred on the pre-existing active Kamishiro Fault, which is developed along the Itoigawa-Shizuoka Tectonic Line, which defines the boundary between the Eurasian and North American plates. The surface-rupturing earthquake produced dominant thrusting and subordinate strike-slip displacement. Structures that developed during the co-seismic surface rupture include thrust faults, fault scarps, en-echelon tension cracks, folding structures such as mole tracks and flexural folds, and sand-boils. The surface displacements measured in the field range from ˜5 cm to 1.5 m in the vertical (typically 0.5-1 m), accompanied by a strike-slip component that reached 0.7 m along NE-trending ruptures. These observations indicate a thrust-dominated displacement along the seismogenic fault. Our results show that (i) the pre-existing Kamishiro Fault, which strikes NNE-SSW, controlled the spatial distribution of co-seismic surface ruptures and displacements; and (ii) the style and magnitude of thrust displacements indicate that the present-day shortening strain on the Eurasian?North American plate boundary in the study area is released mainly by seismic thrust displacements along the active Kamishiro Fault.

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