

Tectonic geomorphology in the northern coast of the Suwa Lake and evolution of the Suwa Basin, along the middle part of the ISTL

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We conducted a tectonic geomorphological survey in the northern coast of the Suwa Lake (in the area between Shimosuwa and Chino), along the middle part of the Itoigawa-Shizuoka Tectonic Line (ISTL). Procedure of this study as follows; 1) aerial photo analysis and field survey, 2) mapping of geomorphic surfaces and reconstruction of geomorphic evolution, 3) mapping of tectonic landforms which explain the geomorphic evolution reasonably, 4) measure vertical displacement by construction of cross sections and calculation of slip rates. Slip rates were estimated based on fault displacement and ages of terraces (H: older than 120 ka, M1: 90-100 ka, M2: 40-65 ka, L1a: 20 ka, L1b: 10 ka, L2: 4-7 ka, L3: 1-2 ka). Although mapped faults in this study are similar to existing papers, different results were obtained in some areas as follows; 1) we judged fault traces in existing papers near the Suwa Taisha Harumiya which lies on the right bank of the Kamikawa River is not a tectonic landform but an erosional scarp, 2) we judged that broad gentle slope at Suwa Taisha Akimiya which is thought as flexural scarp is not a tectonic landform but a depositional landform of landslide deposits, 3) we judged that the (fault) scarp in Shiga is not a tectonic landform but an erosional scarp, 4) fault scarps which lie along boundary between the Suwa Basin and mountainous area at Uehara are newly recognized, 5) the fault scarp near Chino station at the right bank of the Kamikawa River is newly mapped, 6) the fault scarp which deforms alluvial surface in a valley bottom at Sakamuro is newly recognized. Faults in the Suwa Basin classified into two categories; the first is linear left lateral faults distributed around the Okaya and Chino city, the second is normal faults distributed along the boundary between the Suwa Basin and mountainous area. We estimate that activity of the former faults construct a pull-apart basin in the middle part of the Suwa Basin, based on the subsurface structure elucidated by seismic profiling and deep boring. We thought that the latter faults are the secondary fault of the former one, based on the feature of the latter faults, such as discontinuous distribution, frequent change in slip rates, and round shaped fault traces.