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Late Quaternary Faulting and Paleoseismology in the southern Korean Peninsula

JAI-BOK KYUNG[1] and UEECHAN CHWAE[2]

[1]*Korea National University of Education, South Korea (jbkyung@knue.ac.kr)*
[2]*Korean Institute of Geosciences and Mineral Resources, South Korea (chwae@naver.com)*

Major orogenic events in the Korean peninsula occurred mainly in Late Paleozoic and Mesozoic time. No prominent tectonic movements occurred during the Quaternary except for some isolated volcanic events. However, evidence of uniform uplift exists for the southern half of the Korean peninsula, especially along the eastern coast with the average uplift rate of about 0.1m/ka [1] since the last glacial culmination. Some faults such as the Yangsan and Ulsan faults were active in the Late Quaternary, even though their slip rates are estimated to be less than 0.1m/ka [2].
Major damaging earthquakes have occurred in the peninsula during past 2000 years. Many of these earthquakes occurred in the Kyongju-Ulsan areas in the southeastern part of the peninsula. According to the historical records, some of the earthquakes destroyed houses, created ground fissures, surface depressions, and landslides, and caused liquefaction and sand blows.
In order to clarify the Late Quaternary fault history, we tried many trench excavations along the Yangsan and Ulsan fault zones, and Upcheon and Ilkwang faults in the southeastern part of the peninsula. Serveral kinds of age dating methods were applied to the Quaternary deposits around the fault traces. Their fault characteristics are introduced here with the paleoseismological interpretation.

Keywords: Late Quaternary fault; Yangsan and Ulsan faults; Upcheon faults; South Korea

References

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