

Utility of experienced index for reliability of terrace correlation and chronology

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Uplift estimation in late Quaternary is required for site selection of geological disposal facility for high level radioactive waste. Generally the terrace level and/or the difference in elevation of terraces is an appropriate indicator of uplift (TT and FS' value [1][2]). Reliable method for terrace correlation and chronology is a key issue. Tephra chronology is one of useful methods for terrace correlation and chronology, however it would not be always available. Therefore, stratigraphical meaning of experienced index is reexamined by tephra chronology and some analysis about terrace gravel to survey interrelation between weathering and geological age.

In Japan, there are many terraces, and they often can be classified into three groups: higher, middle and lower terraces. They have similar description for their dissection, weathering and rubefaction in many papers throughout whole Japan. Fundamentally, this classification is supported by tephra chronology.

Colorimetry and effective porosity of terrace gravels in Uonuma hill are measured. Measurements vary in broad range, but older gravel tends to take higher in Ne and b*value. According to the observation of the section of gravel, gravel is made brown from the rim toward the core. Silicous samples indicate low in Ne and b*regardless of its age. While b*value of weathered color-mineral rich gravel is high, Ne value does not depend on rock type. a*value is high in only H2 terrace gravel, this measurement possibly indicates the tendency that b*values increase at an initial stage and a*value increase afterwards [3].

The analysis on Uonuma hill matches the properties that are described about terrace deposit of whole Japan in papers. It also does not contradict to the field observation [4]. And dissection of each terrace in the area does not contradict to description about dissection in papers. These show that experienced index is effective for terrace correlation and chronology.

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