

Proof of last 100,000 years uplift estimation in an inland area using fluvial terraces and its application

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Uplift in last 100,000 years estimated in both side of the Ayashi fault in Miyagi prefecture and the Sekiya fault in Tochigi Prefectures by the relative height of river terraces is almost equal to vertical displacements of these faults in last 100,000 years. Hence, it is concluded that relative heights of fluvial terraces surface and valley bottoms are good indicators of uplift estimation in last 100,000 years in an inland area. Furthermore, significance of the uplift obtained by the proposed methodology in this study is emphasized. It is possible to find the geotectonic feature that were overlooked so far such as unknown active faults, deformed zones along active fault, tectonic style of uplift and subsidence by obtaining the 3-dimensional distribution of uplift in last 10,000 years. Methodology and concept proposed in this study give practical survey method of late Quaternary 3-dimensional uplift characteristics for the long-term safety of geological disposal of high-level radioactive waste. By applying this method to Quaternary research, new insights on the Quaternary tectonic movement should be given.