Topography interpretation of Tokachi Central Flexure Zone by high-resolution DEM of airborne laser scanner

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New topographical survey technology examined a possibility of contributing to the improvement in accuracy of active fault investigation. In this study, detailed topographic interpretation in the Tokachi fault zone in the central part of the Hokkaido was performed using the geomorphologic analysis technique using digital elevation model created with the airborne laser scanner. The object of research is a extremely small slope which has been considered a tectonic landform on the terrace of Tokachi river. The slope angle is extremely shelving with 2 degrees or less of inclinations. And it is not easy to recognize the tectonic landform by aerial photograph interpretation or other surveys on the ground. Airborne scanner measurement result shows that the slope is the west side of a bulge structure with a width of 200-280m and advanced difference of about 2m.

According to the feature of minute geographical shape, it is considered that the bulge structure is a part of eroded fun. And there is no positive proof which shows that the same terrace surface carried out displacement across a shelving slope of the bulge. Moreover it turns out that there is no evidence which shows that the basement carried out displacement from 13ka by drilling investigation, and there is a peat layer with a thickness of 2m inside the bulge sediment. Consequently, it became clear that there is no positive proof which shows that the same terrace surface carried out displacement by tectonic movement across a shelving slope of the bulge. And there is a high possibility that some topographical features former considered to be tectonic landform were formed by erosion / deposition.