

## Geomorphological evidence of a newly found active fault along the Shirakawa fault in western part Gifu Prefecture

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### 1. PASCO CORPORATION

Recently, expression of micro topography was made possible by improvement of LiDER DEM technology. The surface rupture in the southern part of Mt. Kunimi, Oshu City, Iwate Prefecture that occurred in the 2008 Iwate-Miyagi Nairiku earthquake was expressed using airborne LiDAR-derived 0.5-m-grid DEM (Maruyama et al. 2011).

It is difficult to detect fault traces in the forest zone using photographs, and it is effective to use LiDER DEM.

When 1 m grid DEM was prepared from LiDER data along Shougawa village of Shogawa village, Gifu prefecture, we confirmed new fault topography with possibility of sub fault of Shirakawa fault.

The LiDER data was measured by Jinzu River Sabo Office, Hokuriku Regional Development Bureau, MLIT in 2016.

The photograph taken at the same time as LiDER is difficult to recognize fault topography because it is a forest zone.

At the Kiya point along the Sho river, west side of study area, the trench of the Shirakawa fault was investigated (Sugiyama et al. 1993).

In the trench survey, at least one earthquake event has been certified since 2,500 y.B.P.

However, the last event and activity interval are unclear.

A new fault trace is found on the right bank slope of Nonomata Valley on the east side of Kiya, Shokawa village, Gifu Prefecture, and the length reaches 1.3 km.

The fault topography along the trace is a gentle slope and a reverse-facing fault scarplet which are linearly continuous on the slope of the mountain.

The vertical component is a western uplift similar to the Shirakawa fault, and is about 10 to 20 m from the topography section.

There is a weak left offset ridge across the fault topography.

In addition, a left offset ridge with a slope top of about 200 m is found on the northern side of the fault topography.

From these evidences we assume that this fault has repeated activity.

In the southern part of the fault topography there are reverse-facing fault scarplet and relatively wide gentle slopes, which are suitable for trench survey.

At this point there is no accumulation of coarse-grained sediments by rivers, and there is little loss of formation. Therefore it is possible to identify the last event of the Shirakawa fault.

### Reference

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