

## Distribution and feature of fracture zone in fault steps -An example of the western part of the Atotsugawa Fault-

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Mechanical damage to basement rocks due to strike-slip fault activities can spread in fault steps. Detailed topographical and geological researches for understanding fracture zone structures in fault steps are necessary to estimate the extent of the mechanical damage. Our research of the western part of the Atotsugawa Fault in the Hida City, Gifu Prefecture shows that the faults high-angle oblique to the principal direction of the Atotsugawa Fault characteristically occur in the fault step, which effect that the fracture zone increases in width.

The Atotsugawa fault, which is one of the Class A active faults, trends ENE-WSW and shows dextral strike-slip displacement. We firstly checked the occurrence of the fault step in the Miyagawa-cho area of the western part of the Atotsugawa Fault by way of aerial photograph interpretation. Then we researched the distribution and feature of fracture zone in the Kawai-cho area where the fault continues lineally and in the Miyagawa-cho area where the fault step exists.

Fracture zone in the Kawai-cho area consists of fault gouge, fault breccia and foliated cataclasite. Fault planes mostly strike ENE-WSW to E-W and dip steeply N or S, subparallel to the principal direction of the Atotsugawa Fault. Composite planar fabric indicates dextral strike-slip displacement. Width of the fracture zone can be less than several tens meters.

In the Miyagawa-cho area, faults of NW-SE and N-S strike dominantly occur as well as those of ENE-WSW to E-W strike. Almost all faults dip steeply N or S and consist of fault gouge, fault breccia and cataclasite. Composite planar fabric generally indicates dextral strike-slip displacement, but partly indicate sinistral. Total width of the fracture zone can be more than a hundred meter.

Remarkable existence of NW-SE and N-S strike faults high-angle oblique to the principal direction of the Atotsugawa Fault distinguishes the fracture zone in the Miyagawa-cho area as those in the Kawai-cho area.