

足柄層群塩沢累層中の変形礫岩 Ddeformed conglomerates of the Shiozawa Formation of the Ashigara Group

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1.Introduction

In the South Fossa Magna, central Japan, the block on the Philippine Sea Plate has multiply collided subducting plates (Amano,1986,1991). The Ashigara Group formed as a trough filling after the collision of the Tanzawa block. Subsequently, collision of the Izu block occurred. The Ashigara Group deformed at high strain rates. The group has a folded structure, and the dip of the bedding planes on the limb is steep.

2. Ddeformed conglomerates of the Shiozawa Formation

The conglomerates of the Shiozawa Formation of the Ashigara Group exhibit remarkable deformation. In particular, the granitic pebbles elongated. Although the conglomerates are of Pleistocene age and considerably new sediments, the heavily deformed sediments appear to be old and to have deformed deep in the crust.

The deformed pebbles are characterized by P-R1 cataclasites, and they elongate along the P foliation and slip on R1 shear planes. They show cataclastic flow structures under the microscope. The fragments are fine and follow the flow direction. The content of clay minerals in the deformed pebbles is low. There was no strong hydrothermal alteration to accelerate deformation. The pebbles are deformed by fracturing, which mechanically reduces the grain size.

Accordingly, it is assumed that the P-R1 cataclasites formed deep in the crust. This fact contradicts the generally accepted theory that the Ashigara Group is shallow.

3.Various deformation bands of the Shiozawa Formation

There are many deformation bands formed at different depths in the Shiozawa Formation. We have classified them into four types based on differences in the deformation style.

Type A and B have deformed pebbles, which are P-R1 cataclasites. The width of Type A is several meters, whereas Type B is several tens of centimeters. The deformed pebbles concentrate in deformation bands. Type C is characterized by P-R1 cataclasite and fault gouge. Type D has no P-R1 cataclasite structures; it is characterized by planar faults. The pebble shape does not show elongation. Type-D was subdivided into D1, D2, and D3 according to the color of the fault gouge.

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