Study of rheology and origin of deformed conglomerates, Pliocene Hamaishidake Formation Fujikawa Group, Eastern part of Shizuoka prefecture, Central Japan -Tectonics of the collision zone recorded deformed conglomerate-

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South Fossa Magna is located at the meeting part of the Philippine Sea, Eurasia, North America Plate, and it is the most variable zone in japan. It has also attracted attention as a multiple collision and addition site for the Honshu arc of the Izu-Ogasawara arc on the Philippine Sea Plate. Hamaishidake Formation of Fujikawa Group (Upper Miocene-Pliocene) widely distributed in this study area is trench-fill sediments in connection with collision event, which consists of conglomerate and volcanic clastic rock. The fujikawa estuary fault zone (Iriyama and Shibakawa fault, total length is over 26km) ron NS trend between the Hamaishidake Formation on the west side and the Ihara Group (Pleistocene) on the ease side. And it is said that the southern extension of these fault zone connects to Suruga trough (Sugiyama and Shimokawa, 1982). Therefore, it is expected that the trench-fill sediments is recorded traces of complex tectonics at the plate boundary. Furthermore in recent years, outcrop of foliated cataclasite which undergoes brittle deformation while flowing was reported in the conglomerate layer of the Hamaishidake Formation (Maruyama, 2008). Its continuity and the cause remain unknown because foliated cataclasite has not been known from Hamaishidake Formation so far. So in this study, in order to elucidate the tectonics in the collision zone, we carried out basic description of foliated cataclasite outcrop and various analyses based on them.

Foloated cataclasite (Fuji River shear zone) is exposed to the riverbed near the Shin-Uchibusa bridge over the Fuji River, southwest part of Fujinomiya City, Shizuoka Prefecture. (Outcrop size is 30m E-W, 300m N-S). Deformation is not uniform, we confirmed some deformation convergence zone. Strike of the formation and trend of the shear zone are almost parallel. These basic trends are N45˚-60˚W, but EW trend is also confirmed. The deformation style of the gravel is diversified from non-deformation type to developed shear type, and gravel which the outer shape flows type (Cataclastic flow), and there are confirmed coexisting. The shear sense required from the fabric of gravel shows sinistral sense. The continuity of the shear zone was not recognized in this survey. In the surrounding geology, it was found that brittle deformation accompanying the NS folding structure and fault gouge is dominant. In addition, we measured structure of the fault plane at various places, and determined old stress by using multiple inverse method (Yamaji, 2000 etc.). As a result, we got lateral fault stress field of NNE-SSW $\sigma 1$ from the Fujikawa shear zone, reverse fault stress field of EW $\sigma 1$ from the surrounding fault gouge, and sinistral fault field of WNW-ESE $\sigma 1$ from the fracture zone near the Iriyama fault.

Results of such description and analysis, It became clear that the shear zone has a local distribution which has a basic structure (NW-SE trend) obliquing with the surrounding geological structure (NS trend). And considering the resume depth of the fault rock, there is a clear gap in the deformation style between the shear zone and its surrounding geology. If the shear zone is formed deeper depth than the fault gouge forming resume depth, it is conceivable that there was a local geological rising event after the folding because NW-SE trend structure of the shear zone cuts the fold structure of the surrounding NS system. From the stress analysis result, first works in this study area, The lateral shear stress field of NNE-SSW

compression, which forms the shear zone. Along with the rise of the geologic body, they converted into EW compression which contributed to the formation of NS fold structure system. And NS fault system acted as reverse fault. After that, Iriyama fault started sinistral sense under the WNW-ESE compression stress field. In this presentation, we will discuss the history of geological structure development at the plate boundary from such descriptions and analysis results.

Keywords: South Fossa Magna, multiple collision zone, Fujikawa estuary fault zone, deformed conglomerate, fault rocks

