

# Geological study of huge breccia-bearing volcanoclastic sedimentary sequence : Narao area, Goto islands, Nagasaki

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Huge breccia-bearing sedimentary sequence is generally formed by high-energy flow or currents. It is important for studying the depositional origins to understanding the geological events (e.g. volcanic eruption, meteorite impact and Tsunami etc). Narao area, Nakadori-jima, Goto islands, Nagasaki contains approximately 300m thickness huge breccia sequence which formed lower tuff breccia unit and upper tuff unit. We focus to recognize the sedimentary mechanism of this sequence. This study focused point counting about clastic component, grain size, angularity or roundness and matrix character on field and petrographic observations.

The formation is formed by a few meters huge breccia-bearing lower unit and thick tuff upper unit. The clastic component is classified 5 types; rhyolite, alteration dacite, volcanoclastics, mudstone and sandstone. The lower tuff breccia is rich in sedimentary rocks, and the upper tuff abounds volcanic origin rock. The tuff breccia is characterized by containing polymictic lithic fragments which distributed fining-upward sequence. The microscopic examination shows that the tuff breccia is dominated by variably lithic and crystallized fragments. Matrix is not welded and contains mud, volcanic glass shards is included as fragments.

The field observation and microscopic examination revealed that the tuff breccia is formed by volcanic mud flow deposit (e.g. lahar).