R004-P08
ポスター 2 ：9/25　AM1/AM2 （9:00-12:30）

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Viscous remanent magnetization dating of reworked boulders from Beppu Bay

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Fields of coastal boulders are amongst the most impressive sedimentary evidence of past catastrophic tsunami and extreme storm events. Dating the deposition age of these boulders enables prediction of frequency-magnitude patterns of high-energy wave events. Although the radioisotope ages from marine organisms can reveal the reworking history at the site, those rely on the availability of datable organisms. As an attempt to overcome challenges for dating the dislocation of singular boulders, we used a viscous remanent magnetization (VRM) dating method. Reworked boulders are expected to acquire a VRM approximately parallel to the geomagnetic field. The magnitude of such a VRM depends on several factors, including the time since reworking and ambient temperature for which there are well-known theoretical relationships of single-domain (SD) magnetic particles. VRM unblocking temperature can, therefore, be a tool for determining the reworking age of boulders. Most boulders on Itogahama beach in Beppu Bay are composed of andesite, and their features are consistent with the Akisada pyroclastic flow deposits (0.43 Ma) that are distributed behind the boulder site. It is thus possible that the boulders originate from the cliffs of the pyroclastic flow deposit. However, it is also possible that the boulders on the beach were reworked by tsunamis and, thus, may provide an insight into the local history of earthquakes and tsunamis. Although one-inch core samples have shown the two-magnetic vector components, the unblocking temperature of younger components were higher than 200 degree Celsius, which indicates the chemical alteration of pre-existing magnetic minerals. To avoid such difficulties, we conduct the paleomagnetic analysis of single silicate crystal. The thermal demagnetization result has shown the three magnetic vector components, and those unblocking temperatures are lower than 200 degree Celsius. The youngest VRM component suggests the reorientation of the boulder by paleotsunami, and the VRM ages correspond to the previously reported four sandy tsunami sediments. On the other hand, older VRM component ages are much older than the 0.43 Ma. Here, we discuss about those ages using a modified VRM dating method (e.g., Sato et al. 2016), which considers the effects of distribution of grain size and magnetic domain state other than SD.