

Study on faulting concerning long-term stability of geological environment: spatial distribution and feature of fault crush zones

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Fault activity causes deformation and mechanical damage, and subsequent change in the groundwater flow, to the surrounding rocks. For the site selection of underground repositories of high-level radioactive waste, describing the spatial distribution and characteristics of topographic lineaments, crush zones and fractures concerning fault activity is essential for the assessment of long-term stability of geological environment in the investigation area. As regarding fault crush zones, their spatial distribution is constrained by the heterogeneity of fault geometry such as stepover, and their characteristics are involved in their permeability structure. Here, we present the procedure and result of the geological survey in the western part of the Atotsugawa Fault, Gifu Prefecture, which is practiced a case study focused on the spatial distribution and characteristics of fault crush zones.