

H₂ gas within the drilling core from the Atotsugawa active fault zone :preliminary report

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Recently, H₂ gas generation by fracture surface of rocks-fluid interaction have been verified by experimental studies (e.g., Kameda et al., 2003). It is well known that anomalous concentration of H₂ gas along active faults correlate with the fault activity (e.g., Sugisaki et al., 1984). Migration, storage, and release processes of the H₂ gas below the earth's surface are not clear with respect to the generation process mentioned above. So, we investigated, at the beginning, relationship between the architecture of the drilling core from the Atotsugawa active fault zone and underground H₂ gas concentration.

The architecture was classified into the fault core or damage zone. The H₂ gas relatively concentrated into the damage zone in macroscopic scale. It is inferred that the damage zone behaves as a conduit or a storage zone of the H₂ gas. Qualitatively, adsorption of the H₂ gas on the fracture surface and the fracture geometry are noticed as the conflicting storage and conduit mechanism.