



Fracture characteristics of gas hydrate-bearing sediments in the Ulleung Basin, East Sea

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The LWD (Logging-While-Drilling) logging (including wireline logging) and coring (including pressure coring) were conducted during UBGH2 (Ulleung Basin Gas Hydrate) expedition. The LWD data from 13 logged sites were obtained and most of the sites showed typical log data indicating the presence of gas hydrate. In particular, prominent fractures were clearly identified on the resistivity borehole images from the seismic chimney structures. The strike and dip of each fracture in all sites was calculated and displayed on the stereographic plot and rosette diagram. Fracture orientations on the stereographic plot are more broadly distributed, indicating that the fracture pattern is not well-ordered on the rosette diagram, although the maximum horizontal stress dominates NW-SE direction at most sites. This indicates that accurate horizontal stress directions cannot be completely resolved from the fractures. Moreover, the fractures may be developed from overburden (e.g., gravitational effect) compaction associated with sediment dewatering after deposition. Thus we should consider various factors affecting formation of fractures in order to interpret the origin of fractures. Nevertheless, the results of fracture analysis can be used to interpret distribution pattern and type of gas hydrate in the Ulleung Basin.