

The discovery of mud ridge in the Kumano Trough by seismic reflection study

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Mud volcano is a surface expression of mud diapirism derived from deeply buried unconsolidated formations. It is thought that main driving force of mud diapir is abnormal pore pressure and density inversion. Moreover another various factors such as existence of methane and tectonic settings might influence mud diapirism.

We carried out multi-channel seismic survey in the Kumano Trough in 2008. Seismic profiles show obscure zones and drag folds beneath the mud volcanoes. Similar structure is also observed beneath the NE-SW trending ridge. Reflectors of sedimentary strata are basically discontinuous across this obscure zone beneath this ridge although small offsets are partly recognized.

This linear structure is regarded as mud ridge formed by mud diapirism along fault-induced fractures and anticlinal structures. BSRs well-developed around the mud ridge could be formed due to active fluid/gas migration associated with mud diapirism.