

## On the fluid-excited oscillation

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Earthquake that has low frequency relative to that of ordinal small earthquake is observed near the Moho and at lower crust, that is called deep low-frequency earthquake (DLF). Some fluid is considered to be associated with the generation of the DLF since the generated region is near volcano. The DLF is conventionally studied from observation and excited process of the DLF is individually considered (e.g., Ukawa and Ohtake, 1987; Nakamichi et al., 2003). However, since information about the DLF from the observation is very definitive, it is considered that we do not fully capture character of the DLF. Accordingly, we must get new information about the DLF from new idea and improvement on the observational method at present. Concrete physical image and foresighted model of excitation of the DLF is necessary for it. It is expected that observational researcher is inspired from them and the observational method is improved.

Many types of fluid-excited oscillation are observed and their mechanisms are investigated in field of fluid industry, polymer chemistry and etc. Some of them could cause low-frequency oscillation at situation of the Earth. For example, control valve-fluid system (Misra et al., 2002) and capillary flow of polymer melts (Shore et al., 1997) are expected to cause the low-frequency oscillation assuming proper length of volcano channel. They also show chaotic behavior (Hayashi et al., 1997; Shore et al., 1997). These fluid excited oscillations are expected to be associated with the excitation of the DLF.

In this presentation we report the fluid-excited oscillation investigated in other field of earth science for construction of model experiment and physical image of the excitation of the DLF.