

Underground Structure of Wushanding Mud Volcanoes in Southwest Taiwan by Electromagnetic Exploration

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As it is expected that the mud volcanism causes natural disasters, it is important to evaluate the activity of a mud volcano when choosing the underground facilities such as high level radioactive geological disposal facility. Active inland mud volcanoes are distributed in Southwest Taiwan, locating along the axis of anticlines and faults. We carried out the geophysical exploration by CSAMT method around the Wushanding mud volcanoes distributed along the Chishan fault in Taiwan to identify the underground structure and flow path of fluid from deep underground based on the resistivity distribution.

As a result, the low resistivity zone is distributed along the Chisan fault at the depth of 100-500m. Also, the low resistivity zone is distributed under the Wushanding mud volcano from 100m to 300m deep. The fluid erupted at the mud volcano ascends along the Chishan fault and some of them are erupted at the fault and others migrate to the anticline axis, being trapped once under the impermeable cap rock and ascend again to the ground surface, forming mud volcanoes.

Keywords: mud volcano, Taiwan, CSAMT method, underground structure, fluid

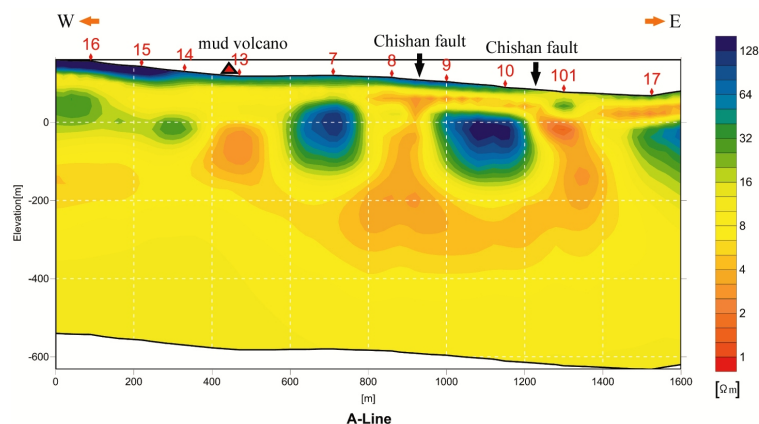


Fig.1 Resistivity profile analyzed by 2D inversion of the CSAMT survey