

地表ソース型空中電磁探査法の沿岸域への適用性 - 淡路島北西部の例 - Applicability of grounded-source airborne electromagnetics to coastal areas: Northwest- ern Awaji Island case

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Understanding geological and hydrogeological characteristics in coastal areas is important in many ways and especially for siting of geological disposal of nuclear wastes. We have developed a type of airborne electromagnetics (AEM), called grounded electrical source airborne transient electromagnetics, or GREATEM, in which we have succeeded to increase the depth of investigation from conventional 200 m to 300-350 m in an alluvial coastal plain, Kujukuri, Japan. Here, we present another application of GREATEM to northwestern Awaji Island. Compared to Kujukuri, the northwestern Awaji Island is a rugged mountainous area, and hence much difficult to apply AEM. It is also characterized in that granitic rocks are widely distributed and a distinct fault, the Nojima fault, which was activated in the 1995 Kobe earthquake, lies parallel to the coastal line. Our temporary conclusions are as follows: Although it is difficult to obtain the exact electric resistivity value for granitic basements, remarkable differences exist between onshore and offshore underground resistivities. By applying a slow flight speed of ~40 km/h, we could obtain offshore underground resistivities to a depth of ~500 m, which should be the world's deepest investigation depth by AEM.

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