**Japan Geoscience Union Meeting 2012**
(May 20-25 2012 at Makuhari, Chiba, Japan)


STT03-P05 Room:Convention Hall Time:May 23 17:15-18:30

# Applicability of grounded-source airborne electromagnetics to coastal areas: Northwestern Awaji Island case

TSUKUDA, Kazuhiro[1*], ITO, Hisatoshi[1], KIHO, Kenzo[1], Hideshi Kaieda[1], Koichi Suzuki[1], MOGI, Toru[2], Akira Jomori[3], YUUKI, Youichi[4], ABD ALLAH, Sabry[2]

[1]CRIEPI, [2]Hokkaido Univ., [3]NeoScience Co., [4]Oyo Co.

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.

Keywords: Airborne electromagnetics, Geological disposal, Coastal area, Awaji Island