



## **Ground penetrating radar for investigations shallow active faults in Aqaba area, Jordan**

A. Abueladas, A. Alzoubi, E. Akawi, T. Niemi, R. AlRuzouq and Z. Ben-Avraham

(1) Al-Balqa' Applied University, Department of Surveying and Geomatics Engineering, Faculty of Engineering, Al-Salt 19117, Jordan.

(2) Department of Geosciences, University of Missouri-Kansas City, (UMKC), 5100 Rockhill Road, RHFH 42, Kansas City, MO U.S.A.

(3) Department of Geophysical and Planetary Science, Tel Aviv University (TAU), Faculty of Exact Sciences, Ramat Aviv 69978, ISRAEL

Shallow subsurface considered as one of the most important geological areas of investigation because of its importance for resources and human activities. Near surface unconsolidated sediments and rocks also explore the history about the recent geology of a region. Studying the young sedimentary cover gives us an idea of active tectonic processes more ever allows us to learn more about future tectonics motion.

Active faults which have seismic activity or displacement during the last 10,000 years considered as the most common sources of earthquakes and tectonic movements. The city of Aqaba is located at the northern end of Gulf of Aqaba along the southern part of the Dead Sea Transform (DST) which is the source of seismic activity in the region.

Continuous ground penetrating radar (GPR) survey was carried out Aqaba using 100 MHz and 400 MHz monostatic antennas with approximately 15 meter maximum depth penetration. Different kinds of fractures and discontinuities inside and outside the city of Aqaba were determined. Analysis of the discontinuities along GPR cross section (radagram) can be interpreted as a set of shallow fractures and faults with various lithologic changes.