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Two-dimensional basement modeling of central loop transient electromagnetic data from the central Azraq basin area, Jordan

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Abstract

Thick sedimentary sequences are deposited in the central area of the Azraq basin in Jordan consisting mostly of hyper-saline clay and various evaporates. These sediment successions form the 10 km × 10 km large Azraq mudflat and are promising archives for a palaeoclimatical reconstruction. Besides palaeoclimatical research, the Azraq area is of tremendous importance to Jordan due to groundwater and mineral resources. The heavy exploitation of groundwater has lead to a drastic decline of the water table and drying out of the former Azraq Oasis.

Two 7 and 5 km long transects were investigated from the periphery of the mudflat across its center using a total of 150 central loop Transient Electromagnetic (TEM) soundings. The scope of the survey was to detect the thickness of sedimentary deposits along both transects and to provide a basis for future drilling activities.

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