

EVIDENCES FOR DISCOVERING SUBSURFACE STRUCTURES USING REMOTE SENSING DATA IN NINEVEH GOVERNORATE, NORTHWEST IRAQ

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ABSTRACT

Analysis of remotely sensed data and topographical maps with some field observations have helped in the identifications of fourteen morphostructural anomalies controlling the landscapes and the drainage networks in the strip border between Iraq and Syria, from Fiesh Khaboor to Wadi Al-Ajjj. These data are representative of new local subsurface structures. Various geomorphic indications were used in the identifications of these anomalies like, radial drainage patterns, water divides, domelike structure, isolated homoclinal ridges, tonal variations and abrupt change in stream courses and fan surfaces.

Most anomalies detected are aligned Northwest – Southeast and East – West, suggesting the presence of morphostructural trends in this part of northwestern basin's of Iraq. A comparison between these anomalies and the available geological and geophysical data enables the definition of two distinct morphostructural domains in the study area.

These data were utilized to draw a regional morphotectonic map of the study area. The map can be used not only for assessing the adaptability of landforms and/ or the sensitivity of geomorphic conditions to the related neotectonic activity, but also for the studying of the relationship between morphotectonic zones and oil exploitation in this area.

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