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## Hydro geochemical and seismological exploration for geothermal resources in South Sinai, Egypt utilizing GIS and Remote Sensing

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Manipulation, combination, overlay, integration and reattribution GIS and remote sensing functions have been used to explore the possible new occurrences of geothermal resources in South Sinai. Moreover, surface observations and lineament analysis of satellite images are used to delineate the active geothermal areas. The distribution of recent earthquake epicentres over South Sinai shows three main active trends (N60E, N400-750E and N500-600W) conformable with the long fault extensions extracted from ETM+7 and ASTER GDEM satellite images and comprise the well-known hot springs in South Sinai. The N60E trend intersects both of N500-600W or N400-750E, the temperature of spring waters is remarkably increases. This feature attributed to the deep penetration of groundwater along the N60E fault trend (Gulf of Aqaba trend). The seismicity patterns of well-known and newly predicted geothermal sites show that, the majority of earthquakes have focal depths range between 3 and 33 km and have micro to moderates magnitude ( $0.5 \ge Mb \le 4.5$ ). In addition, the maximum focal depth of events reached up to 50 km at Hammam Faroun area revealing the deep-seated thermal source. The main chemical type of the known thermal water of south Sinai is Cl-Na, indicating a long flow pathway of this water. The high calcium contents of thermal water of South Sinai are accompanied with remarkably low sulphates. The hydrochemistry of the newly predicted thermal sites exhibits similar pattern of the known thermal waters. Such observations are used as indicators to locate six predicted new occurrences of geothermal fields in South Sinai.

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## An evaluation of the influence of land use/cover change on the urban heat island of Aswan city using remote sensing and GIS

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A secotourism becomes more and more popular, developing countries are now embracing it and including it in their economic development and conservation strategies. Egypt enjoys a rich cultural and environmental heritage and offers an exceptional environment for ecotourism development. The purpose of this study is to identify success factors that affect selecting ecotourism site prior to undertaking the development of an ecotourism operation, understanding these factors will mitigate the risk of failure of selecting process. This research focused on the analysis of theoretical and conceptual knowledge in available literature especially on Egypt.

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