Abstract

Dropping in groundwater levels, groundwater quality degradation and land subsidence are common Consequences of Over extraction from aquifers in Worldwide, especially in arid and semi arid areas. Groundwater resources are the only source of water providing for agriculture, drinking and industrial usages in center, and South and East area of Iran. Kerman plains located in Dranjir Desert (Dranjir Desert is located in the catchment of central Iran) and is situated at the south-eastern Iran from 56° 30' to 57° 30' E longitude and 29° 50' to 30° 30' N latitude. In recent years, Drought and a significant reduction of surface water resources and in addition of Increasing Demands For water Caused the over draft of groundwater resources in these areas. This study has two sections. In the first part, trend of Spatial and temporal changing in groundwater level and its Concentration of TDS in water year 1375-76 in contrast of 1387-88 were studied. By use of geostatistical techniques, zoning maps of both parameters in each year were separately prepared. Results revealed that the situation of groundwater level and TDS Concentration varies in different parts of the plain. And also the temporal contrast of obtained maps showed that both parameters in this area significantly decreased. In the next sections, the amount of land subsidence by using two series of radar images captured in 28/12/2007 and 01/02 / 2010 from some parts of Kerman plain and also using InSAR technique was computed. Obtained Maps showed that in during 2 years-period, land subsidence was occurred equal to 47 cm in maximum. And studies also showed that groundwater level reduction have contributed to this phenomenon

Keywords: Ground water, Land subsidence, Kerman plain, Interfrometric Synthetic Aperture Radar(InSAR)

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Determination of land subsidence due to Groundwater abstraction, by Using InSAR Technique case study: (Keraman plain)

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